FXS H.323 Gateway

User Manual

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Preface

Congratulations on your purchase of the FXS Gateway.

About this User's Manual

This user's guide gives hardware specifications and explains web configurator and command line configuration for the FXS Gateway.

Online Upgrade

Please refer to online Technical Support or Select Product VoIP Gateway download library for additional support documentation.

General Syntax Conventions

- Mouse action sequences are denoted using a comma. For example, click start, Settings, Control Panel, Network means first you click Start, Click or move the mouse pointer over Settings the click or move the mouse pointer over Control Panel and finally click (or double-click) Network.
- "Enter" means for your to type one or more characters.
- Predefined choices are in **Bold Arial** Font.
- Button and field labels, link s and screen names in are in **Bold Times New Roman** font.
- A single keystroke is in Arial font and enclosed in square brackets. [Enter] means the Enter.
- For brevity's sake, we will use "e.g.," as shorthand for "for instance", and "i.e.," for "that is" or "in other words."

Naming Conventions

- "FXS Gateway" refers to the FXS Gateway 2AFXS and 4AFXS for 2 Ethernet Port.

Related Documentation

- This user's guide provides hardware connection details and configuration and management instruction for the managements FXS Gateway.
- Please refer to Technical Support or Select Product VoIP Gateway download library for additional support documentation.

:

Part I:

FXS Gateway Overview

This part introduces the general features default settings and hardware of the FXS Gateway.

Chapter 1
FXS Gateway Overview

The chapter introduces the FXS Gateway general feature, factory default settings and hardware.

1.1 FXS Gateway Overview

FXS Gateway, which based on ITU-T H.323 v3, provides voice and fax over IP networks. Its simplified operation and configuration features are the most suitable for residential and SOHO application. There are three models for FXS Gateway, which are 2FXS, 2AFXS and 4AFXS. One more added switch hub for A series is the only difference. User can choose 2 ports or 4 ports as request in A series. Just an IP address and 2/4 phone sets bring you to Voice over IP world.

1.2 Features of The FXS Gateway

FXS Gateway Features

- ITU-T H.323 v3 compliance
- Ethernet:
  - 2FXS: One 10Base-T Ethernet port
  - 2AFXS / 4AFXS: Two 10/100 Base-T Ethernet ports
- Configuration interface: RS-232, TELNET and HTTP web management
- Automatic Gatekeeper Discovery
- Dimensions:
  - 2FXS: 165(W) x 25(H) x 100mm(D)
  - 2AFXS / 4AFXS: 222(W) x 34(H) x 143mm(D)
- Transmit Voice and T.38 fax simultaneously
- Support T.38 ECM function (Error Correction in high speed fax Mode)
- Provides call progress tone
- E.164 Common Dial Plan
- DTMF Dialing
- Inband/Outband DTMF
- TFTP/FTP software upgrade
- Remote configuration/reset
- LED indication for system status
- Support Static IP, DHCP and PPPoE
- To define the dialplan
- Set the ring back tone from the IP or local

- FAX redundancy support
- RAS and Signal port exchangeable
- GK id support and GK auto discovery

Audio feature

- Codec: G.711 a/ μ law, G.723.1 (6.3kbps), G.729A, G.729B, G.729AB
- VAD (Voice Activity Detection)
- CNG (Comfort Noise Generate)
- G.168/165-compliant adaptive echo cancellation
- Dynamic Jitter Buffer
- Bad Frame Interpolation
- Voice/DTMF Gain Settings
- Generate Caller ID (DTMF or FSK)
- Provide In-band or Out-band DTMF generation/detection
- Provide Progress tone

System Monitoring

- System status (Link, Ready, Status, TEL, Power).

Remote Firmware Upgrade

You can use FTP/TFTP to perform configuration backup/restore and firmware upgrade for the FXS Gateway from a remote location.

Security

- Password protection for system management
- VLAN

1.3 Default Settings

The following are the settings of the defualt profile

- Login: root
- Password: Null (default)

1.3.1 IP Parameters

- IP Address = 10.1.1.3
- Subnet mask = 255.0.0.0
- Default gateway = 10.1.1.254

1.3.2 Telnet and Web Login Password

- Login = root

- Password = Null (default)

1.4 Front Panels

Figure 1-11 2AFXS Front Panel

Figure 1-2 4AFXS Front Panel

1.5 Back Panel Ports

Figure 1-3 2AFXS Gateway Back Panel Ports

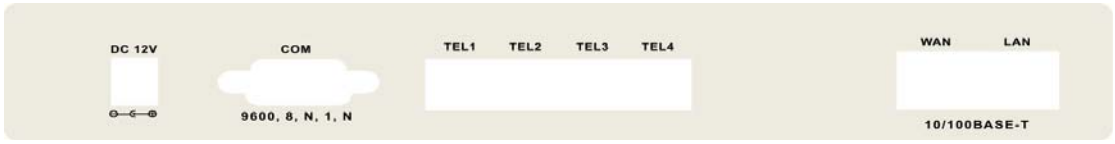


Figure 1-4 4AFXS Gateway Back Panel Ports

1.6 Hardware Specifications

These are the hardware details of the 2AFXS, 4AFXS.

1.6.1 2AFXS LEDs

The following table describes the LED functions:

Table 1-1 2AFXS LEDs Functions

LEDs	Functions	Indicator Status	Active	Description
LAN				Switch to another device, such as PC
Link/ACT	Link/ACT	Green	Blinking	While plugging on the Ethernet cable, it must light on and the flash if some data is being TX/RX.

LEDs	Functions	Indicator Status	Active	Description
			OFF	The Ethernet cable is not connected.
10/100M	LAN	Green	Off	The 10M LAN is connected.
			On	The 100M LAN is connected.
WAN				Uplink to the HUB/Router directly.
Link/ACT	Link/ACT	Green	Blinking	While plugging on the Ethernet cable, it must light on and the flash if some data is being TX/RX.
			OFF	The Ethernet cable is not connected.
10/100M	WAN	Green	Off	The 10M WAN is connected.
			On	The 100M WAN is connected.
Ready	Ready	Green	Slow Blinking	The FXS Gateway is in normal mode.
			Fast Blinking	The FXS Gateway is in downloading mode.
Status	Status	Green	Off	The FXS Gateway is in Peer-to-Peer Mode.
			On	The FXS Gateway has successfully registered to Gatekeeper when it is in Gatekeeper mode.
			Blinking	The FXS Gateway is not registered to Gatekeeper when it is in Gatekeeper mode. The FXS Gateway is in downloading mode.
TEL(1-2)	TEL	Red	On	The Telephone is Off-Hook.
			Off	The Telephone is On-Hook.
Power	Power	Green	On	The Power adapter is connected to the Gateway.
			Off	The system is off or not receiving power.

1.6.2 4AFXS LEDs

Table 1-2 LEDs Functions

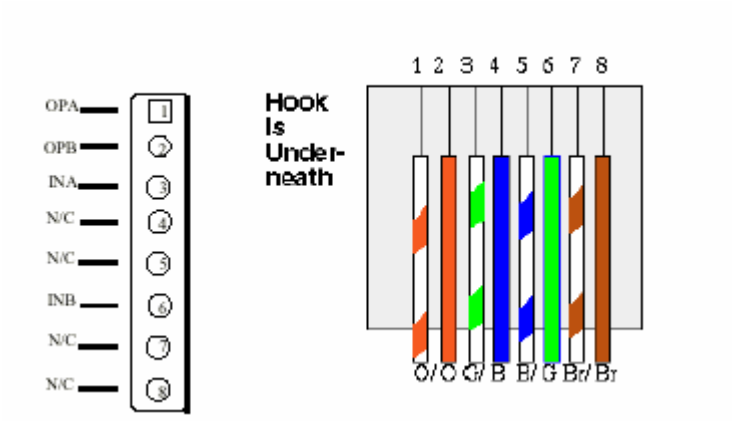
LEDs	Functions	Indicator Status	Active	Description

LEDs	Functions	Indicator Status	Active	Description
LAN				Switch to another device, such as PC
Link/ACT	Link/ACT	Green	Blinking	While plugging on the Ethernet cable, it must light on and the flash if some data is being TX/RX.
			OFF	The Ethernet cable is not connected.
10/100M	LAN	Green	Off	The 10M LAN is connected.
			On	The 100M LANis connected.
WAN				Uplink to the HUB/Router directly.
Link/ACT	Link/ACT	Green	Blinking	While plugging on the Ethernet cable, it must light on and the flash if some data is being TX/RX.
			OFF	The Ethernet cable is not connected.
10/100M	WAN	Green	Off	The 10M WAN is connected.
			On	The 100M WAN is connected.
Ready	Ready	Green	Slow Blinking	The FXS Gateway is in normal mode.
			Fast Blinking	The FXS Gateway is in downloading mode.
Status	Status	Green	Off	The FXS Gateway is in Peer-to-Peer Mode.
			On	The FXS Gateway has successfully registered to Gatekeeper when it is in Gatekeeper mode.
			Blinking	The FXS Gateway is not registered to Gatekeeper when it is in Gatekeeper mode. The FXS Gateway is in downloading mode.
TEL(1-4)	TEL	Red	On	The Telephone is Off-Hook.
			Off	The Telephone is On-Hook.
Power	Power	Green	On	The Power adapter is connected to the Gateway.
			Off	The system is off or not receiving power.

1.6.3 Back Panel Port

Ethernet Port:

Ethernet port is for connecting FXS Gateway to network, transmit rate supports 10/100 Base-T.



Ethernet connector（LAN）

COM Port:

RS232 console port (DB-9pin male connector)

Note: use straightforward cable to connect to your computer.

PINOUTS

Pin	Name	Dir	Description
2	RXD	←	Receive Data
3	TXD	→	Transmit Data
5	GND	—	System Ground

TEL Port:

RJ-11 connector, FXS interface. To connect analog phone sets or trunk line of PABX.

12V DC Port:

DC Power supply.

1.6.4 Back Panel Connections

This section outlines how to connect your FXS Gateway to the LAN and the WAN. In the case of connecting a Cable Modem you must connect the coaxial cable from your cable service to the threaded coaxial cable connect on the back of the cable modem.

Step 1. Connecting the Console Port

For the initial configuration of your FXS Gateway, you need to use terminal emulator software on a workstation and connect it to the FXS Gateway the console port. Connect the 9-pin end of the console cable to the console port of the FXS Gateway and the other end to a serial port (COM1, COM2 or other COM port) of your workstation. You can use an extension RS-232 cable if the enclosed one is too short. After the initial setup, you can modify the configuration remotely through telnet connections.

Step 2. Connect the FXS Gateway to the WAN port

Connect the WAN port (silver) on the FXS Gateway to the Ethernet port on the cable modem using the cable that came with your cable modem. The Ethernet port on the cable modem is sometimes labeled “PC” or “Workstation”.

Step 3. Connecting the PC to the LAN

If you have more than one PC, you must use an external hub. Connect the 10/100M LAN Port (gold) on the FXS Gateway to a port on the hub using a straight through Ethernet cable. If you only have one PC, you can connect the FXS Gateway to the PC directly without a hub. For a single PC, connect the 10/100M LAN port on the FXS Gateway to the Network Adapter on the PC using a crossover cable (red tag).

Step 4. Connecting the Power Adapter to your FXS Gateway

Connect the power adapter to the port labeled **POWER** on the rear panel FXS Gateway.

Caution: To prevent damage to the FXS Gateway, first make sure you have the correct AC power adapter. Please see the Appendices for AC power adapter specifications for your region.

Step 5. Grounding the FXS Gateway

If you want to ground the FXS Gateway then connect a grounded wire to the F.G. (Frame Ground) of the FXS Gateway.

1.7 Additional Installation Requirements

In addition to the contents of your package, there are other hardware and software requirements you need before you can install and use your FXS Gateway. These requirements

include:

1. A computer with an Ethernet NIC (Network Interface Card) installed.
2. A computer equipped with communications software configured to the following parameters:
   - VT100 terminal emulation.
   - 9600 Baud.
   - No parity, 8 Data bits, 1 stop bit, Flow Control set to None.
3. Use Internet Explorer 5.5 and later or Netscape Navigator 6 and later versions.
4. Analog telephone set
5. Software tools: Gatekeeper (optional)

After the FXS Gateway is properly set up, you can make future changes to the configuration through telnet connections

1.8 Setting Up the TCP/IP Protocol

If you are not sure whether the TCP/IP Protocol has been installed, follow these setups to check, and if necessary, install TCP/IP onto your PCs.

Step 1. Click the “Start” button, Choose “Settings”, then “Control Panel”. Double-click the “Network” icon. Your Network window should appear as follows.

Step 2. Select the “Configuration” tab.

Import:

For Windows 2000 & Windows XP Setting, you will find that they differs with Windows 98/ME/NT slightly. See the Following for reference.

Click the “Local Area Connection” icon on the lower right hand side of your desktop screen.

In the “**Local Area Connection Status**” windows, click the “**Properties**” button the your Network windows will appear.

There is only one tab, “**General**”, in the Network window.

Step 3. Click whether the TCP/IP Protocol has already been installed onto your computer’s Ethernet card. Note that TCP/IP Protocol an be installed for a computer’s Dial-Up Adapter as well as for the Ethernet cad.

- If yes, go to set 7.
- If no, click the “Add” button

Step 4. Double-click “**Protocol**” in the Select Network Component Type or highlight “**Protocol**” then click “**Add**”.

Step 5. Highlight “**Microsoft**” under the list of manufactures

Step 6. After a new second, you will be returned to the Network window. The TCP/IP

Protocol should now be on the list of installed network components.

Step 7. Click the "**Properties**" button. The TCP/IP Properties windows consist of several tabs. Choose the "**IP Address**" tab.

Step 8. Select "**Specify an IP Address**" and enter "**10.1.1.1**" in the "**IP Address**" location (where xxx is a number between 2 and 254 used by the FXS Gateway to identify each computer), and the default "**Subnet Mask "255.0.0.0**". Note than no two computers on the same LAN can have the same IP address.

Step 9. Click on the "**DNS Configuration**" tab and select "**Enable DNS**". Then click the "**Add**" button.

Step 10. Click on the "**Gateway**" tab and enter the High-Performance FXS Gateway default gateway value **10.1.1.254** in the "**new gateway**" field, then click "Add" Button.

Step 11. Click "**OK**", Restart your PC to complete the TCP/IP installation.

1.9 Power Up Your FXS Gateway

At this point, you should have connected the console port, the LAN Port, the WAN port and the power port to the appropriate devices or lines. Plug the power adapter into a wall outlet. The Power LED should be on. The **Status LED** will come on after the system tests are complete. The WAN LED and one of the LAN LEDs come on immediately after the **Status LED** come on, if connections have been made to the LAN and WAN ports.

:

Part II:

Web Configuration with FXS Gateway

This part tells how to access and navigate the web configurator and perform initial configuration. It also describes the Getting Started web configuration when you use the FXS Gateway.

Chapter 2
Web Configuration with FXS Introduction

This Chapter describes how to login into the WEB and navigate through it.

2.1 Web Configuration with FXS Overview

The embedded web configuration allows you to use a web browser to manage the FXS Gateway.

2.2 Accessing the Web Configuration

You will need a computer with and Ethernet 10BaseT, 100Base-TX Network Interface Card (NIC). Connect to the LAN port in the FXS.
Use Internet Explorer 5.5 and later or Netscape Navigator 6 and later versions.
Use the following instructions to login on to the web configuration.

2.3 Login and welcome screen

Step 1. Start your web browser.

Step 2. Launch your web browser and enter “10.1.1.3” (the default IP address of the FXS Gateway) in the **Location** or **Address** field. Press **Enter.**

Step 3. The **Password** screen now appears. Type “**root**” in the user name field (it may display automatically for you) and your password (default “Null”) in the password field.

Step 4. Click **OK.**

Figure 2-1 Login Screen

Step 5. After a successful login, you will see the welcome screen show next.

2.4 Welcome Screen

This is the web configuration welcome screen. Click a link on the navigation panel to go to the corresponding screen.

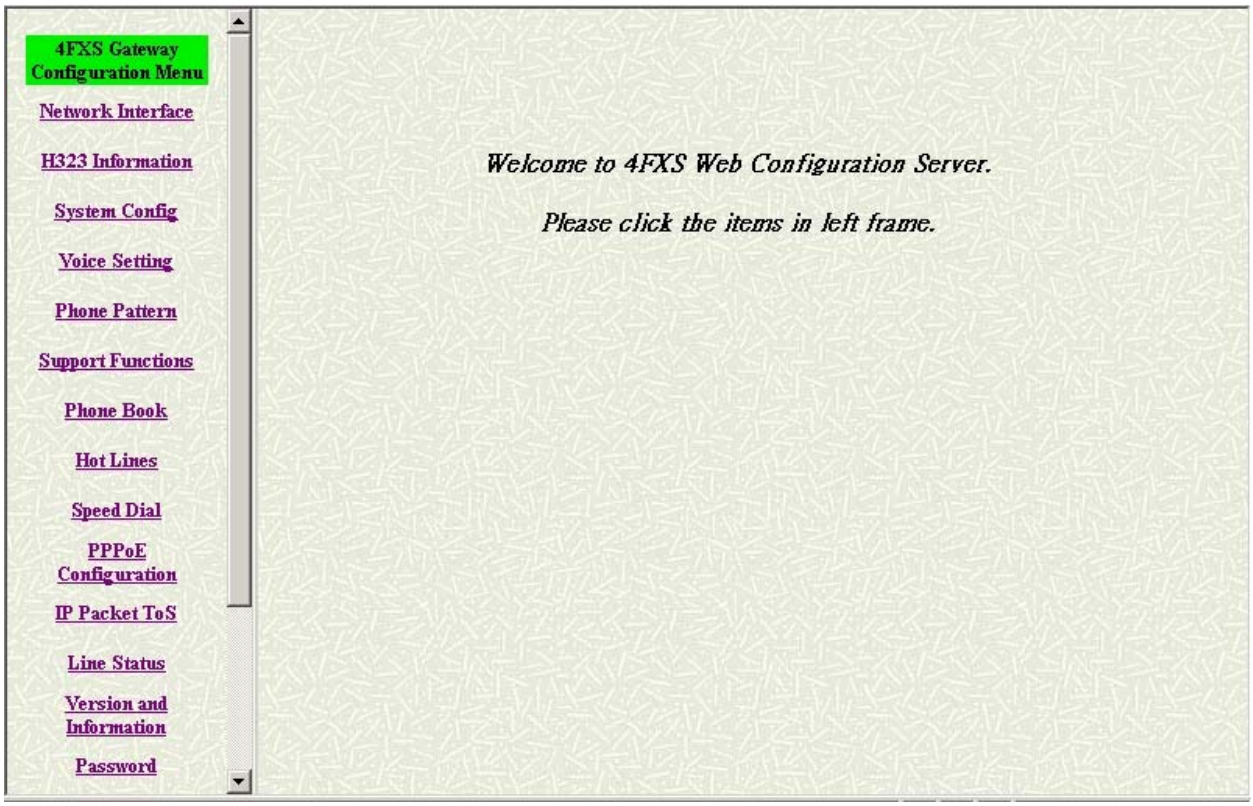


Figure 2-2 FXS Gateway web configuration welcome screen

The following table describes the screen.

Table 2-1 Navigation Panel Links

LABEL	DESCRIPTION
Network Interface	This link takes you to a screen where you can configure the FXS Gateway Network Interface Information.
H323 Information	This link takes you to a screen where you can setup up H323 Information.
System Config	This link takes you to a screen where you can set up System Configuration.
Voice Setting	This link takes you to a screen where you can set up Voice Configuration.
Phone Pattern	This link takes you to a screen where you can set up Phone Pattern Configuration.

LABEL	DESCRIPTION
Support Functions	This link takes you to a screen where you can set up Support Functions Configuration.
Phone Book	This link takes you to a screen where you can set up Phone Book Information.
Hot Lines	This link takes you to a screen where you can set up Hot Lines configuration.
Speed Dial	This link takes you to a screen where you can set up Speed Dialing List.
PPPoE Configuration	This link takes you to a screen where you can set up PPPoE Device Configuration.
IP Packet ToS	This link takes you to a screen where you can set up TOS Configuration.
Line Status	This link takes you to a screen where you can view Line information about the status of the FXS Gateway.
Version and Information	This link takes you to a screen where you can view Version and Information of the FXS Gateway.
Password	This link takes you to a screen where you can change passwords.
ROM Upgrade	This link takes you to a screen where you can change ROM Upgrade configuration.
Flash Clean	This link takes you to a screen where you can click flash memory information and configuration.
Commit Data	This link takes you to a screen where you can click save your changes to the non-volatile memory.
Reboot System	This link takes you to a screen where you can click to reboot FXS Gateway.

2.5 Saving Your Configuration

Click **OK** to save your changes back to the FXS Gateway volatile memory. The FXS Gateway loses these changes if it is turned off or loses power, so use the **Commit Data** link on the navigation panel to the left to save your changes to the non-volatile memory when your are done configuring.

2.6 Navigating the Web Configurator

The web configurator uses one level. For example, to configure **Network Interface**, click the link on the navigation panel to open the configuration screen.

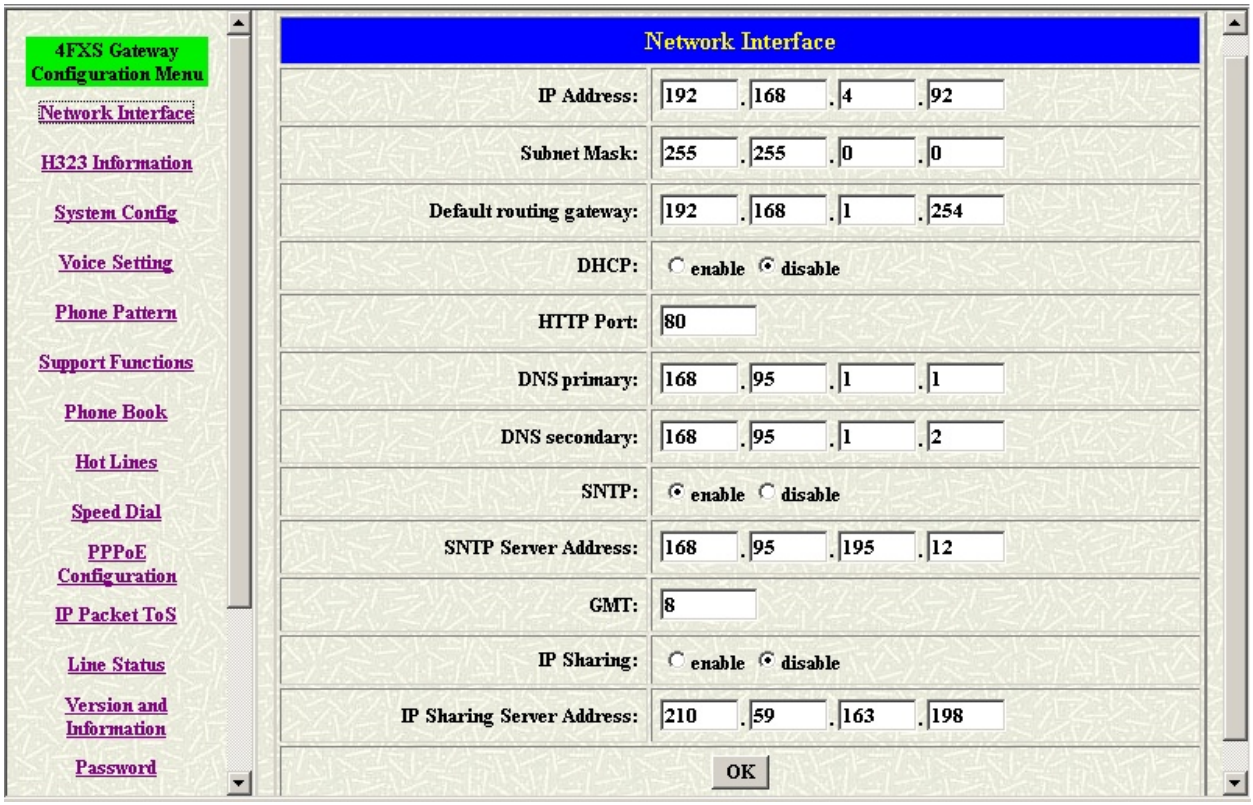

4FXS Gateway Configuration Menu
Network Interface
H323 Information
System Config
Voice Setting
Phone Pattern
Support Functions
Phone Book
Hot Lines
Speed Dial
PPPoE Configuration
IP Packet ToS
Line Status
Version and Information
Password
Network Interface
IP Address: 192 . 168 . 4 . 92
Subnet Mask: 255 . 255 . 0 . 0
Default routing gateway: 192 . 168 . 1 . 254
DHCP: enable disable
HTTP Port: 80
DNS primary: 168 . 95 . 1 . 1
DNS secondary: 168 . 95 . 1 . 2
SNTP: enable disable
SNTP Server Address: 168 . 95 . 195 . 12
GMT: 8
IP Sharing: enable disable
IP Sharing Server Address: 210 . 59 . 163 . 198
OK

Figure 2-3 Network Interface Screen

Chapter 3
Initial Configuration

This Chapter covers the basic configuration needed to set up and use the FXS Gateway. Refer to the other part describes about individual fields within screens.

3.1 Initial Configuration Overview

This chapter describes the procedure for the initial configuration of the FXS Gateway. Refer to the relevant chapters in this *User's Guide* for descriptions of the fields and buttons within individual screens.

3.2 General Configuration

The FXS Gateway the factory with a default IP address of 10.1.1.3 and a subnet mask of 255.0.0.0.

3.3 Static IP address

Step 1. Configuration the FXS Gateway IP address. Click **Network Interface** on the navigation panel. In the **Network Interface** screen, type a new IP address, subnet mask and the default routing gateway (e.g. IP Address: 192.168.4.92, Subnet mask: 255.255.0.0, Default routing gateway: 192.168.1.254) and click the **OK** button.

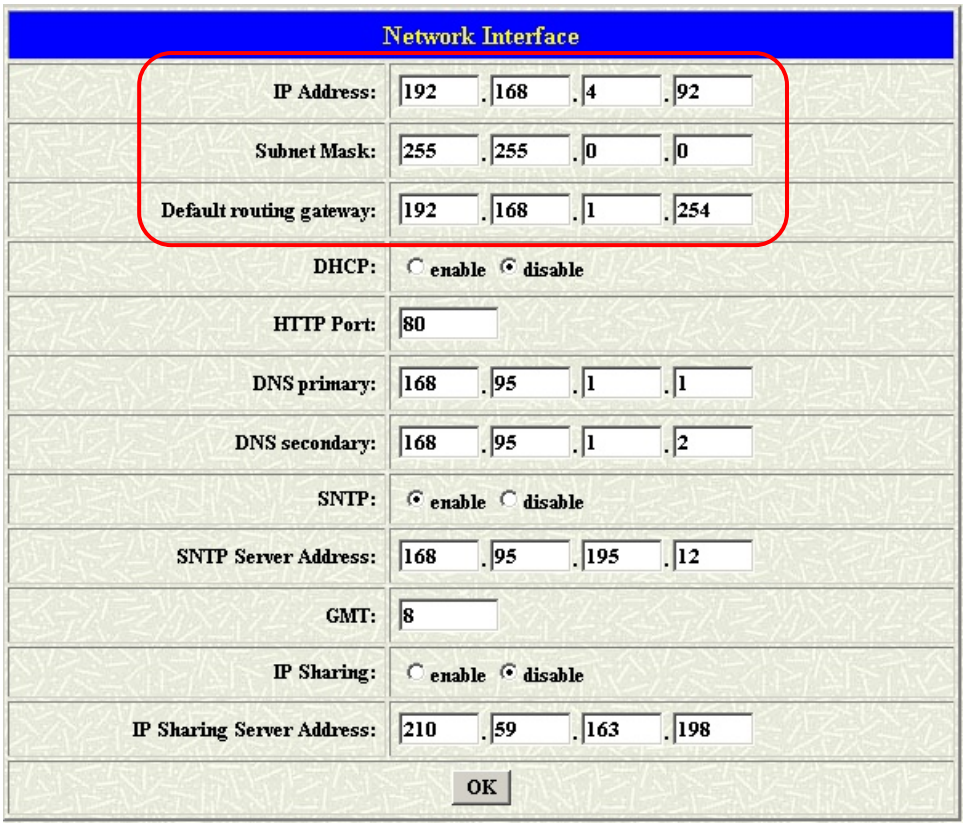

Network Interface
IP Address: 192 . 168 . 4 . 92
Subnet Mask: 255 . 255 . 0 . 0
Default routing gateway: 192 . 168 . 1 . 254
DHCP: enable disable
HTTP Port: 80
DNS primary: 168 . 95 . 1 . 1
DNS secondary: 168 . 95 . 1 . 2
SNTP: enable disable
SNTP Server Address: 168 . 95 . 195 . 12
GMT: 8
IP Sharing: enable disable
IP Sharing Server Address: 210 . 59 . 163 . 198
OK

Figure 3-1 Network Interface

Step 2. Click **Commit Data** on the navigation panel. In the **Commit Configuration Data** screen, click the **Commit** button. In the **Commit Configuration Data** screen to Display **Commit to Flash OK!**, When the Commit Data Ok.

Figure 3-2 Commit Configuration Data

Step 3. Click **Reboot Data** on the navigation panel. In the **Reboot FXS Gateway** screen, click the **Reboot** button. It will take 40 seconds to reboot.

Figure 3-3 Reboot FXS Gateway

Step 4. Close the current browser windows and launch your web browser again. Enter the new IP address in the **Location** or **Address** field. Press [Enter].

3.4 DHCP mode

Step 1. Configuration the FXS Gateway IP address for DHCP Mode. Click **Network Interface** on the navigation panel. In the **Network Interface** screen, enable the DHCP function if you are using the cable modem or DHCP server and click the **OK** button.

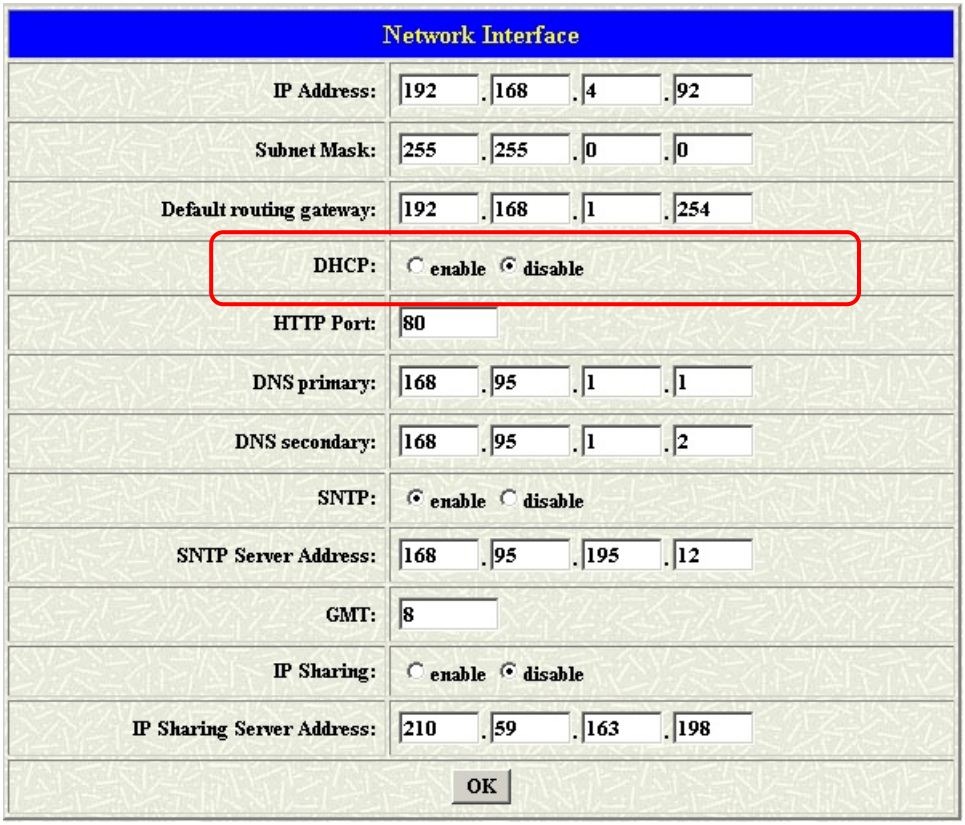

Network Interface
IP Address: 192 . 168 . 4 . 92
Subnet Mask: 255 . 255 . 0 . 0
Default routing gateway: 192 . 168 . 1 . 254
DHCP: enable disable
HTTP Port: 80
DNS primary: 168 . 95 . 1 . 1
DNS secondary: 168 . 95 . 1 . 2
SNTP: enable disable
SNTP Server Address: 168 . 95 . 195 . 12
GMT: 8
IP Sharing: enable disable
IP Sharing Server Address: 210 . 59 . 163 . 198
OK

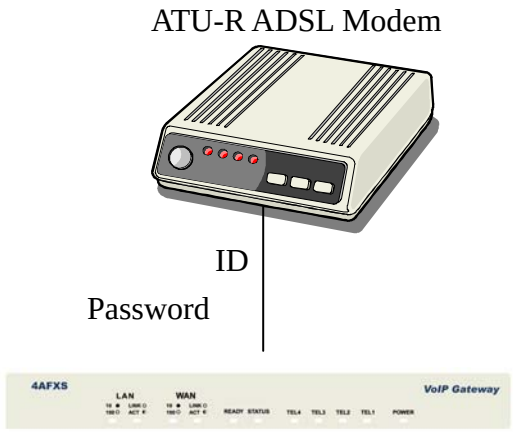
Figure 3-4 Network Interface

Step 2. Click **Commit Data** on the navigation panel. In the **Commit Configuration Data** screen, click the **Commit** button. In the **Commit Configuration Data** screen to Display **Commit to Flash OK!**, When the Commit Data Ok.

Step 3. Click **Reboot Data** on the navigation panel. In the **Reboot FXS Gateway** screen, click the **Reboot** button. It will take 40 seconds to reboot.

Step 4. Close the current browser windows and launch your web browser again. Enter the new IP address in the **Location** or **Address** field. Press [Enter].

3.5 PPPoE mode



FXS Gateway

Step 1. Configuration the FXS Gateway IP address for PPPoE Mode. Click **PPPoE Configuration** on the navigation panel. In the **PPPoE Configuration** screen, On the Device and put the info of the PPPoE User Name and password (e.g. User: 123456@hinet.net, password: 123456) and click the **OK** button.

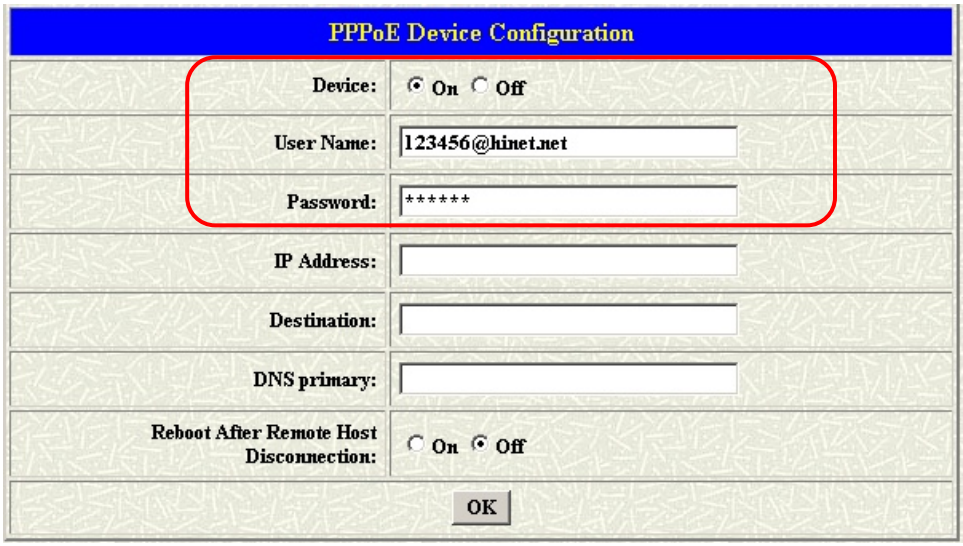


Figure 3-5 PPPoE Device Configuration

Step 2. Click **Commit Data** on the navigation panel. In the **Commit Configuration Data** screen, click the **Commit** button. In the **Commit Configuration Data** screen to Display **Commit to Flash OK!**, When the Commit Data Ok.

Step 3. Click **Reboot Data** on the navigation panel. In the **Reboot FXS Gateway** screen, click the **Reboot** button. It will take 40 seconds to reboot.

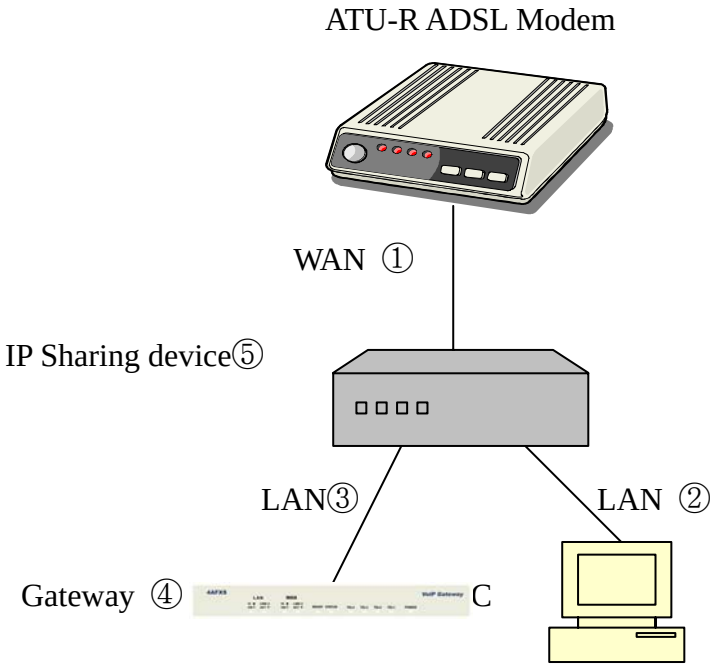
Step 4. Close the current browser windows and launch your web browser again. Enter the new IP address in the **Location** or **Address** field. Press [Enter].

3.6 IP Sharing Configuration

The function is only for the user who is using the IP Sharing device. It is said Gateway is connected to the IP Sharing device.

The IP Sharing Device must support the DMZ or Virtual server functions

An e.g. such as ADSL network is in the following.



1. The WAN IP Address obtained from ADSL has two kinds of methods.
   One is fixed IP Address, while user applies for one or more fixed IP Addresses.
   Another is dynamic IP Address while user applies for dial-up connection way.
2. The LAN IP Address of User's PC can be set as DHCP client in order to gain a valid one.
3. Another IP Address for Gateway must be set as an fixed one in order for that IP Sharing device pass forwarding the relevant information from WAN to LAN. Besides, a valid IP Address meets the IP Sharing device (LAN site) is the element.
4. FXS Gateway must enable the IP Sharing function for the fixed/dynamic WAN IP Address.

Please be noted
With Dynamic WAN IP Address, a valid Gatekeeper for FXS Gateway to get register on is a must. In other word, it is not workable in Peer-to-Peer mode while dynamic WAN IP Address.

5. IP Sharing device must have a function to do IP/Port mapping. Some is named as DMZ, some is named as virtual server whatever. The VoIP messages from WAN have to completely pass forward to the LAN. It is said if the FXS Gateway is assigned a virtual fixed IP Address such as 192.168.1.5, IP Sharing device must forward the VoIP message to 192.168.1.5.

Step 1. Configuration the FXS Gateway IP address for IP Sharing Mode. Click **Network Interface** on the navigation panel. In the **Network Interface** screen, enter the IP address, Subnet mask and the default gateway in the network table. Please follow up your IP Sharing device

Step 2. Enable the IP sharing function and put the static IP address in the IP Sharing server address (e.g. 192.168.4.96) and click the **OK** button.

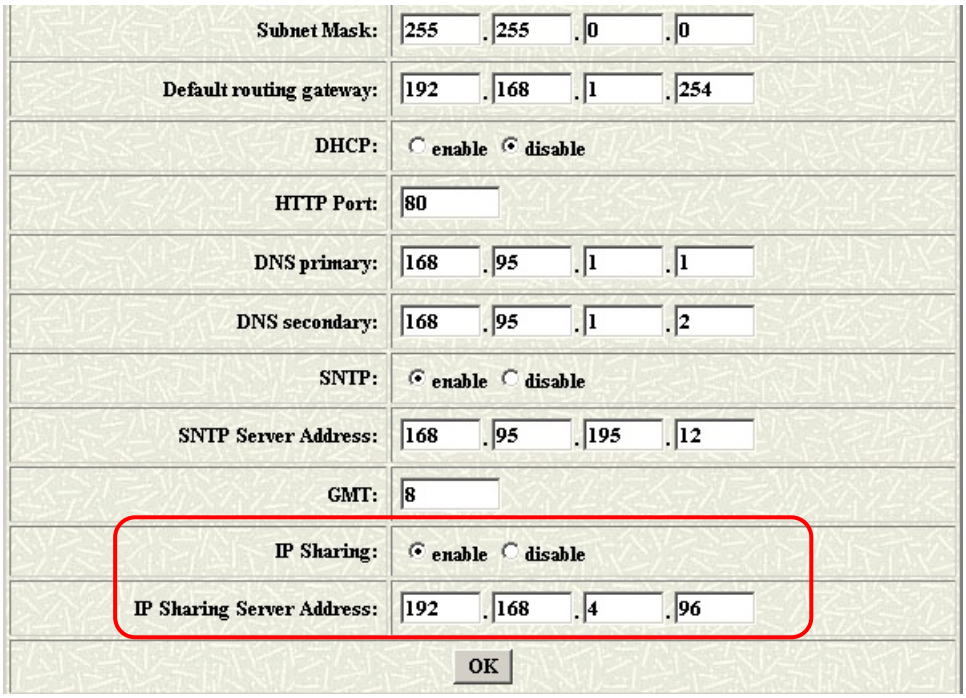

Subnet Mask: 255 . 255 . 0 . 0
Default routing gateway: 192 . 168 . 1 . 254
DHCP: enable disable
HTTP Port: 80
DNS primary: 168 . 95 . 1 . 1
DNS secondary: 168 . 95 . 1 . 2
SNTP: enable disable
SNTP Server Address: 168 . 95 . 195 . 12
GMT: 8
IP Sharing: enable disable
IP Sharing Server Address: 192 . 168 . 4 . 96
OK

Figure 3-6 Enable the IP sharing function

Step 3. Click **Commit Data** on the navigation panel. In the **Commit Configuration Data** screen, click the **Commit** button. In the **Commit Configuration Data** screen to Display **Commit to Flash OK!**, When the Commit Data Ok.

Step 4. Click **Reboot Data** on the navigation panel. In the **Reboot FXS Gateway** screen, click the **Reboot** button. It will take 40 seconds to reboot.

Step 5. Close the current browser windows and launch your web browser again. Enter the new IP address in the **Location** or **Address** field. Press [Enter].

Chapter 4
Making a VoIP Call

This Chapter covers the basic configuration the gateway for making VoIP calls. One is the Peer-to-Peer mode, another is GK routed mode. The configurations and functions are different. Please make sure about the mode you want and follow up the step to configure your gateway.

4.1 Configure the gateway into the Peer-to-Peer mode

Step 1. Configuration the FXS Gateway H323 Configuration. Click **H323 Configuration** on the navigation panel. In the **H323 Configuration** screen, select **Peer-to-Peer** Mode function, set line number (e.g. Line1 Number 000, Line2 Number: 001) and click the **OK** button.

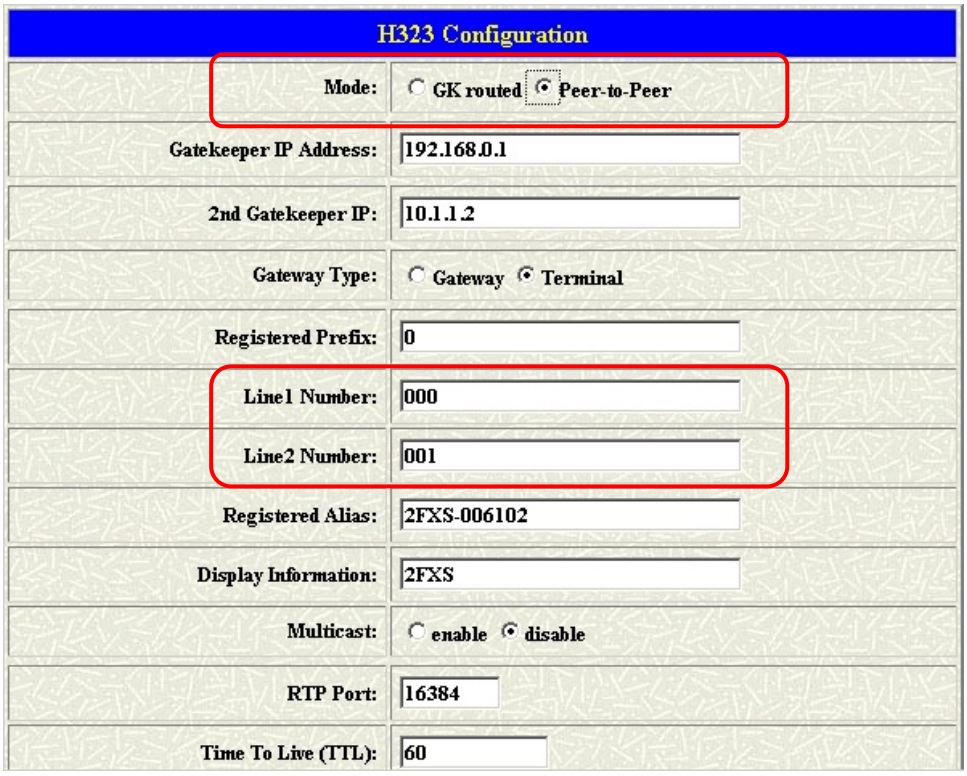


Figure 4-1 H323 Configuration – Peer to Peer mode Screen

Step 2. Configuration the FXS Gateway Phone Book. Click **Phone Book** on the navigation panel. In the **Phone Book** screen, enter the Index, Name, IP address and e164 (phone number) of the destination and click the **Add Data** button.

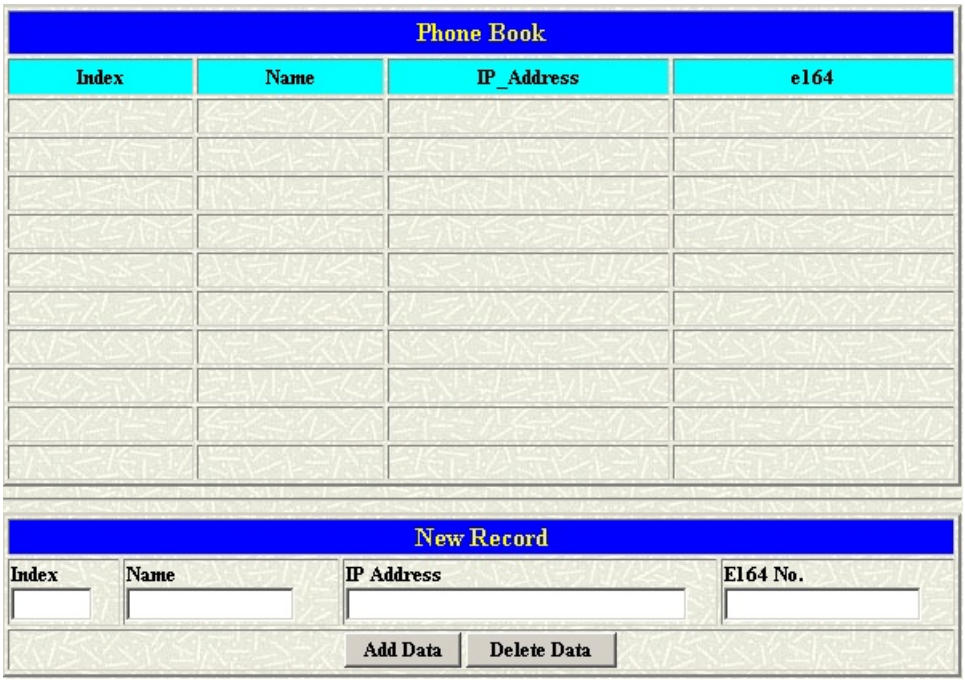


Figure 4-2 Phone Book

Step 3. **E.g.** enter the Index: 1, Name: test1, IP address: 192.168.4.72 and e164 No.: 20 of the destination and click the **Add Data** button.

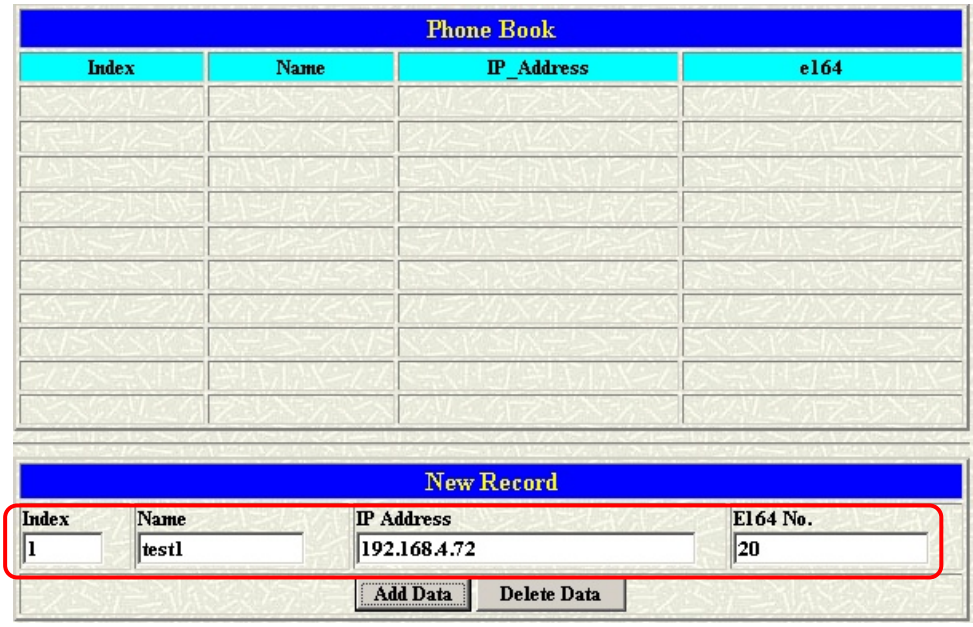


Figure 4-3 Phone Book – New Record

Step 4. On table will display on the first index.

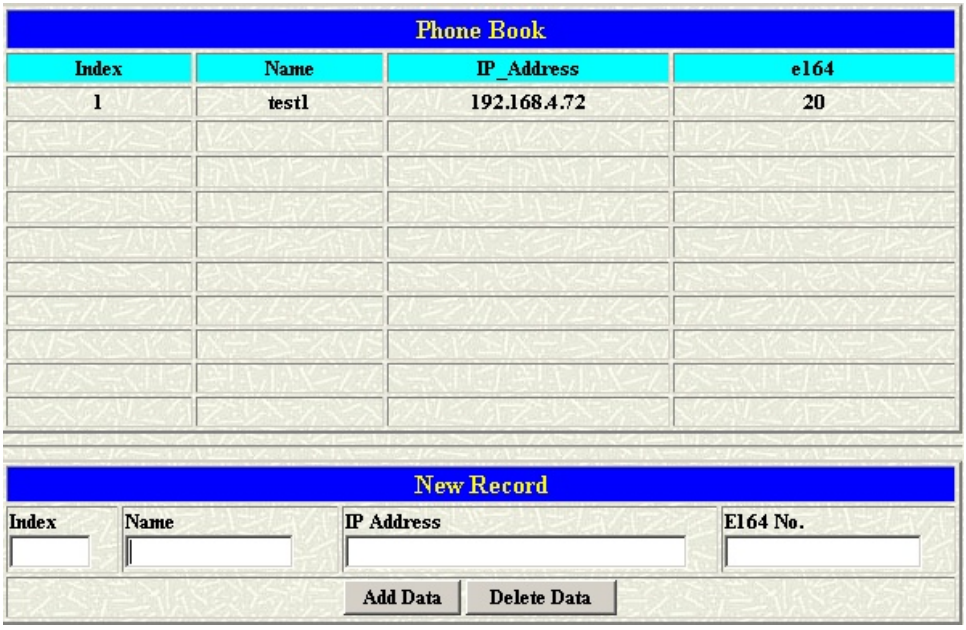


Figure 4-4 Phone Book

Step 5. Click **Commit Data** on the navigation panel. In the **Commit Configuration Data** screen, click the **Commit** button. In the **Commit Configuration Data** screen to Display **Commit to Flash OK!**, When the Commit Data Ok.

Step 6. Click **Reboot Data** on the navigation panel. In the **Reboot FXS Gateway** screen, click the **Reboot** button. It will take 40 seconds to reboot.

4.2 Configure the gateway into the GK routed mode

Step 1. Configuration the FXS Gateway H323 Configuration. Click **H323 Configuration** on the navigation panel. In the **H323 Configuration** screen, select **GK routed** Mode function.

Step 2. To change the GK information from your service provider Gatekeeper IP, 2nd Gatekeeper IP, Gateway Type, Registered Prefix, Line1 Number, Line 2 Number (e.g. Gatekeeper IP: 192.168.4.71, 2nd Gatekeeper IP: 192.168.4.71, Gateway Type: Gateway, Registered Prefix:0, Line1 Number: 000, Line2 Number: 001)**,** and click the **OK** button.

Figure 4-5 Configure the GK info

Step 3. Click **Commit Data** on the navigation panel. In the **Commit Configuration Data** screen, click the **Commit** button. In the **Commit Configuration Data** screen to Display **Commit to Flash OK!**, When the Commit Data Ok.

Step 4. Click **Reboot Data** on the navigation panel. In the **Reboot FXS Gateway** screen, click the **Reboot** button. It will take 40 seconds to reboot.

Chapter 5
Upgrade ROM Version

This Chapter covers the basic how to upgrade FXS Gateway ROM Version.

5.1 Before you start downloading

1. TFTP server program is available to obtain from technical support website.
2. Please create one directory for TFTP server program on one local PC, and then execute it. Put the file, which prepared to upgrade in the same directory.
3. Please confirm Host PC, which is installed as TFTP / FTP server and device is in available network.
4. Remember the current configuration, such as [pbook], [h323].

5.2 Update Application Version

Step 1. Update the FXS Gateway ROM Version. Click **ROM Upgrade** on the navigation panel. In the **ROM Configuration** screen, type a Server IP address, Target File Name, Method, Target File Type (e.g. Server IP Address: 192.168.4.70, Target File Name: 4afxs.203a, Method: TFTP, Target File Type: Application image) and click the **OK** button.

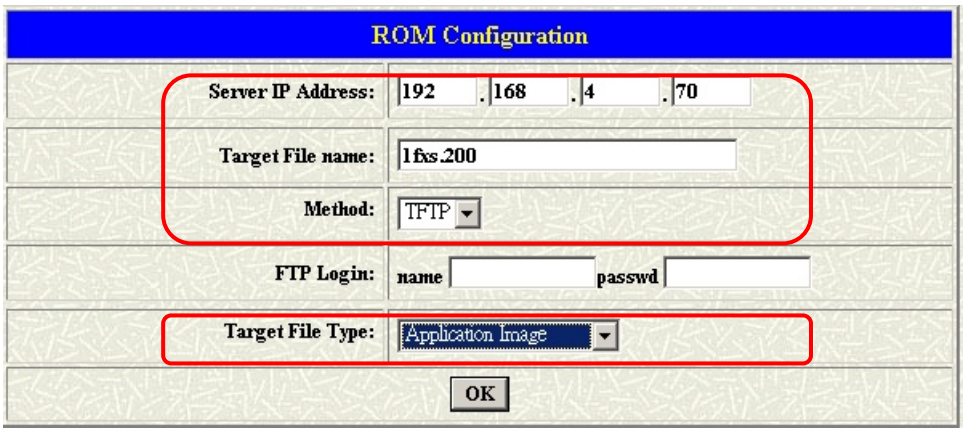


Figure 5-1 ROM Configuration

Step 2. In the screen to Display **Please issue FLASH CLEAN to consist software version.** When the ROM Upgrade file ok.

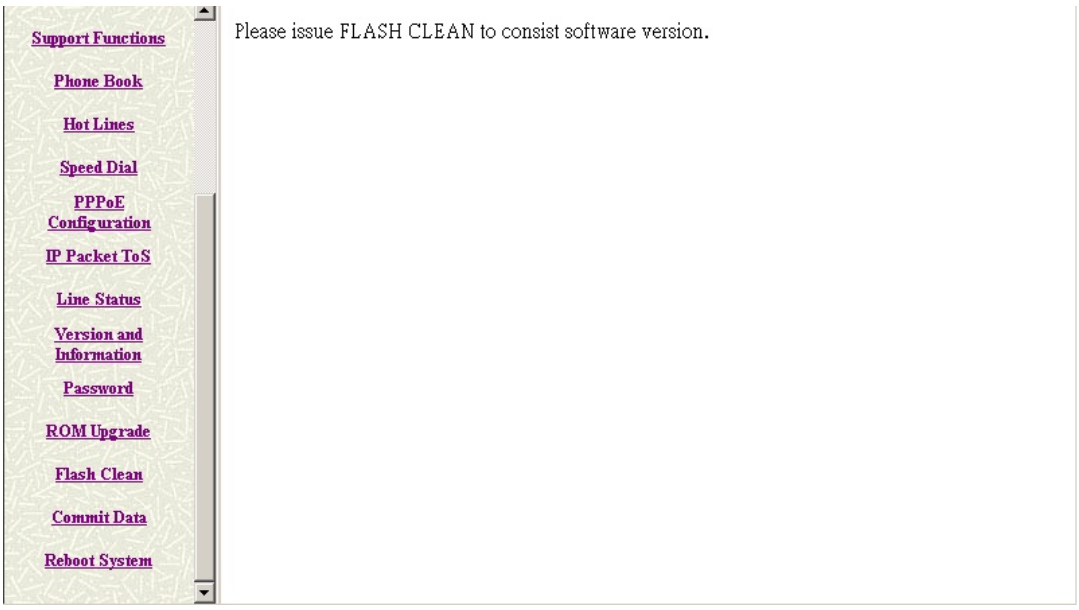


Figure 5-2 ROM File Upgrade ok

Step 3. Click **Flash Clean** on the navigation panel. In the **Flash Clean** screen, click the **CLEAN** button. In the **Flash Clean** screen to Display **Flash cleaned!! Please reboot your system!!**, When the Flash Clean Ok.

Figure 5-3 Flash Clean

Step 4. Click **Reboot Data** on the navigation panel. In the **Reboot FXS Gateway** screen, click the **Reboot** button. It will take 40 seconds to reboot.

Step 5. Close the current browser windows and launch your web browser again. Enter the IP address in the **Location** or **Address** field. Press [Enter].

Chapter 6
Network Interface Screen

This Chapter covers setup Network Interface identification information for FXS Gateway.

6.1 Network Interface Overview

The web configurator provides Network Interface screen.

6.2 Network Interface Screen

Click **Network Interface** in the navigation panel and open the **Network Interface** Screen. Use this screen to setup Network Interface identification information for the FXS Gateway.

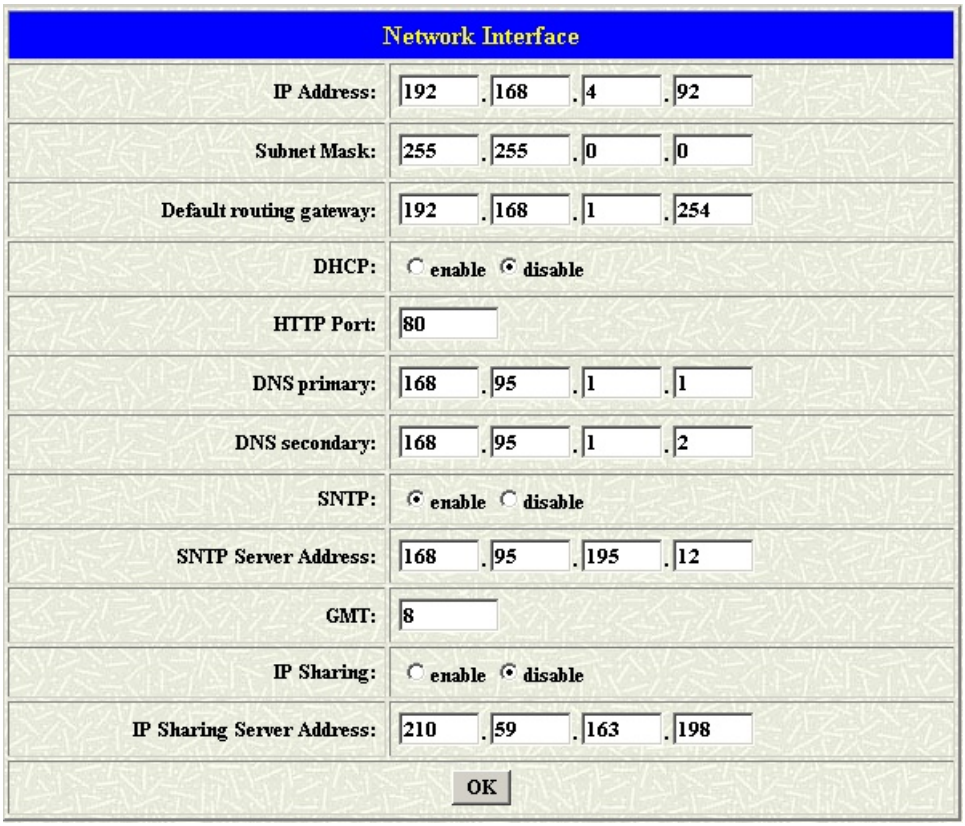

Network Interface
IP Address: 192 . 168 . 4 . 92
Subnet Mask: 255 . 255 . 0 . 0
Default routing gateway: 192 . 168 . 1 . 254
DHCP: enable disable
HTTP Port: 80
DNS primary: 168 . 95 . 1 . 1
DNS secondary: 168 . 95 . 1 . 2
SNTP: enable disable
SNTP Server Address: 168 . 95 . 195 . 12
GMT: 8
IP Sharing: enable disable
IP Sharing Server Address: 210 . 59 . 163 . 198
OK

Figure 6-1 Network Interface

The following table describes this screen.

Table 6-1 H323 Configuration

LABEL	DESCRIPTION
IP Address	Enter the IP Address of the FXS Gateway in dotted decimal notation for e.g. 192.168.4.92. Range of IP Address setting

LABEL	DESCRIPTION
	(0.0.0.0~255.255.55.255).
Subnet Mask	Enter the IP Subnet Mask of your FXS Gateway in dotted decimal notation for e.g. 255.255.0.0.
Default Routing Gateway	Enter the IP Address of the default-outgoing gateway of your FXS Gateway in dotted decimal notation for e.g. 192.168.1.254.
DHCP	Select enable/disable Dynamic Host Configuration.
HTTP Port	Set FXS Gateway HTTP Port Number e.g. 80.
DNS primary	Enter the DNS IP Address in dotted decimal notation for e.g. 168.95.1.1
DNS Secondary	Enter the DNS secondary IP Address in dotted decimal notation for e.g. 168.95.1.1
SNTP	Select enable/disable Simple Network Time Protocol.
SNTP Server Address	Set specify a SNTP Server as network time source in dotted decimal notation for e.g. 168.95.192.12.
GMT	Set local time zone according to GMT e.g. 8.
IP Sharing	Select enable IP Sharing function, when you specify usage of and IP Sharing device.
IP Sharing Server Address	Enter specify a global fixed IP Address, user can add this IP Address in dotted decimal notation for e.g. 210.11.22.33.
OK	Click **OK** to save your changes back to the FXS Gateway volatile memory.

Chapter 7
H323 Information Screen

This Chapter covers setup H.323 related parameters.

7.1 H323 Configuration Overview

The web configurator provides H.323 Configuration screen.

7.2 H323 Configuration Screen

Click **H323 Configuration** in the navigation panel and open the **H323 Configuration** Screen.

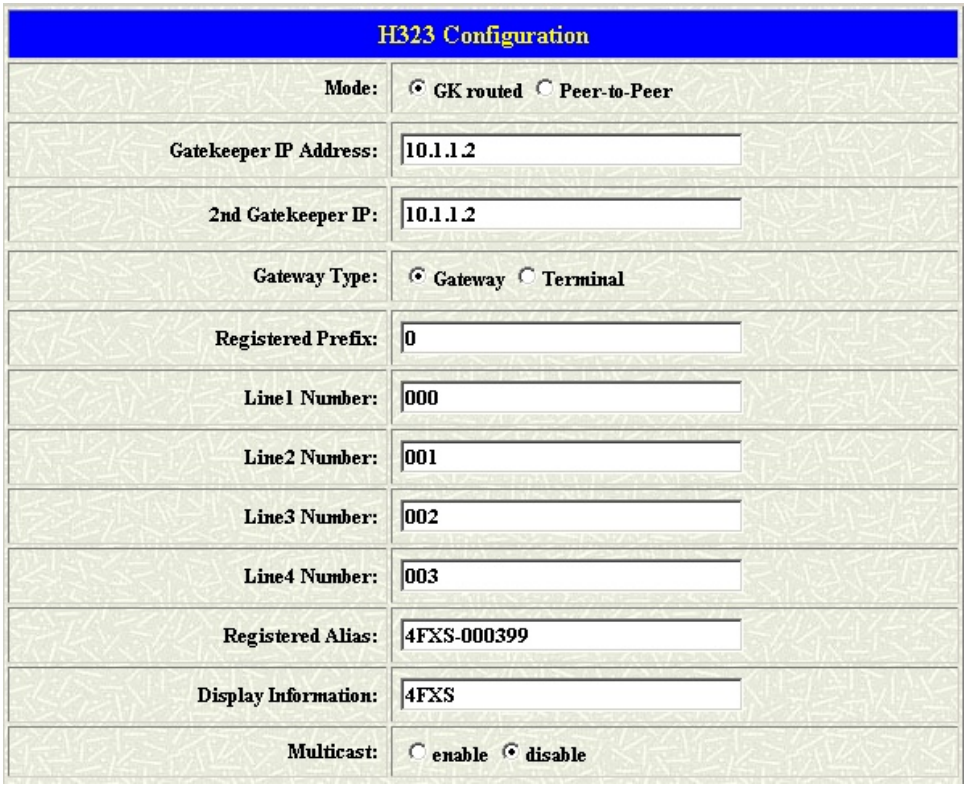


Figure 7-1 H323 Configuration

The following table describes this screen.

Table 7-1 H323 Configuration

LABEL	DESCRIPTION
Mode	Select Gatekeeper routed mode or Peer-to-Peer mode.
GateKeeper IP Address	Set Gatekeeper IP Address in dotted decimal notation e.g.192.168.4.71.
2nd GateKeeper IP	Set redundancy second 2 Gatekeeper IP Address in dotted decimal

LABEL	DESCRIPTION
	notation e.g.192.168.4.71.
Gateway Type	Select registration Gateway Type is Gateway mode or Terminal mode.
Registered Prefix	Set Prefix number while registration Gateway Type is Gateway example 60.
Line1 Number	Set Line1 number e.g.601.
Line2 Number	Set Line2 number e.g.602.
Line3 Number	Set Line3 number e.g.603.
Line4 Number	Set Line4 number e.g.604.
Registered Alias	Set IP side Registration alias as h323 ID.
Display Information	Set string representing display information for repertory to the called party.
Multicast	Select Gatekeeper auto Discovery is enable/disable.
RTP Port	Set RTP port number, example 16384.
Time To Live (TTL)	Set RAS TTL Time, example 60.
Gatekeeper finding port	Set Gatekeeper finding port e.g.1718.
Gatekeeper RAS Port	Set Gatekeeper RAS Port e.g.1719.
H225 RAS Port	Set H225 Call RAS Port e.g.1024.
H225 Call Signal Port	Set H225 Call Signal Port e.g.1720.
Response Timeout	Set max waiting time for 1st response to a new call e.g.15.
Connection Timeout	Set max waiting times for call establishment after receiving 1st response of a new all e.g.200.
OK	Click **OK** to save your changes back to the FXS Gateway volatile memory.

Note: Line1 & Line2 number must follow the prefix number if device is configured as Gateway type. For example, if prefix number is 999, the line1 & line2 number are 9991 & 9992.

Chapter 8
System Configuration Screen

This Chapter covers System Information and configuration.

8.1 System Configuration Overview

The web configurator provides System Configuration screen.

8.2 System Configuration Screen

Click **System conf** in the navigation panel and open the **System Configuration** Screen.

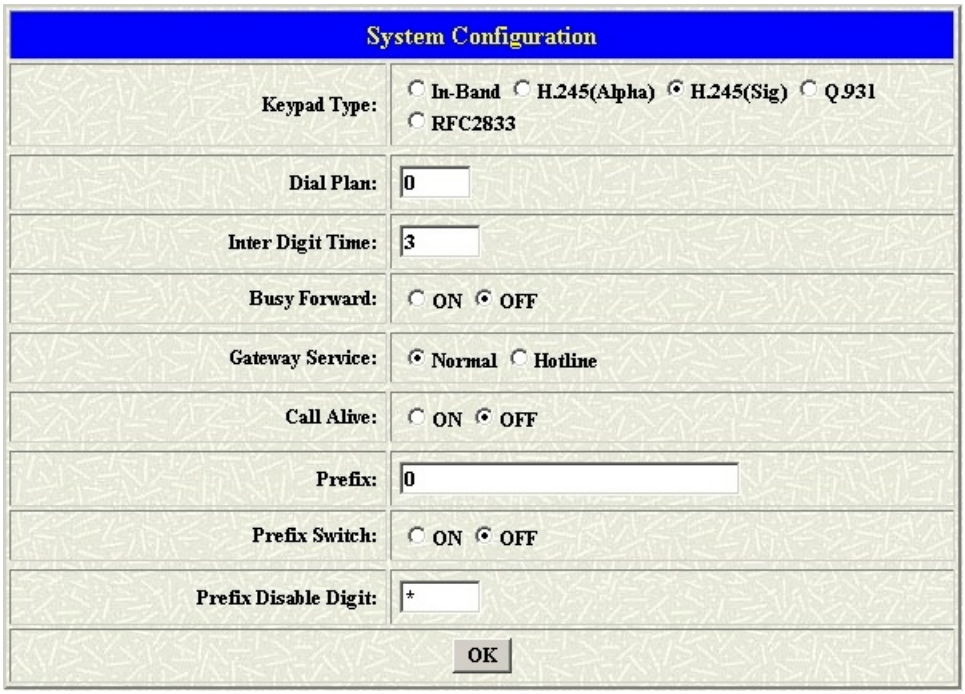


Figure 8-1 System Configuration

The following table describes this screen.

Table 8-1 System Configuration

LABEL	DESCRIPTION
Keypad Type	Select In-Band, H.245 (Alpha), H.245 (Sig), Q931, RFC2833 on DTMF replay type
Dial Plan	Set Number of digits for dial plan, e.g. 0.
Inter Digit Time	Set Inter-Digits time e.g. 3.
Busy Forward	Working in both Gatekeeper mode and Peer-to-Peer mode (some previous version does not support in Peer-to-Peer mode). If the line1 is

LABEL	DESCRIPTION
	engaged as well as this function is enabled, the line2 will be ringing.
Gateway Service	Select specify gateway service type: Dial in service or Hot-Line service, default: Dial in service.
Call Alive	Select on/off for Call Alive function.
Prefix	Set user defined local zone prefix.
Prefix Switch	Select on/off for User defined local zone prefix switch.
Prefix Disable Digit	Disable the defined prefix after press the selected digit (0,1~9, *)
OK	Click **OK** to save your changes back to the FXS Gateway volatile memory.

Chapter 9
Voice Setting Screen

This Chapter covers voice is associated with the audio setting information.

9.1 Voice Configuration Overview

The web configurator provides Voice Configuration screen.

9.2 Voice Configuration Screen

Click **Voice Setting** in the navigation panel and open the **Voice Configuration** Screen.

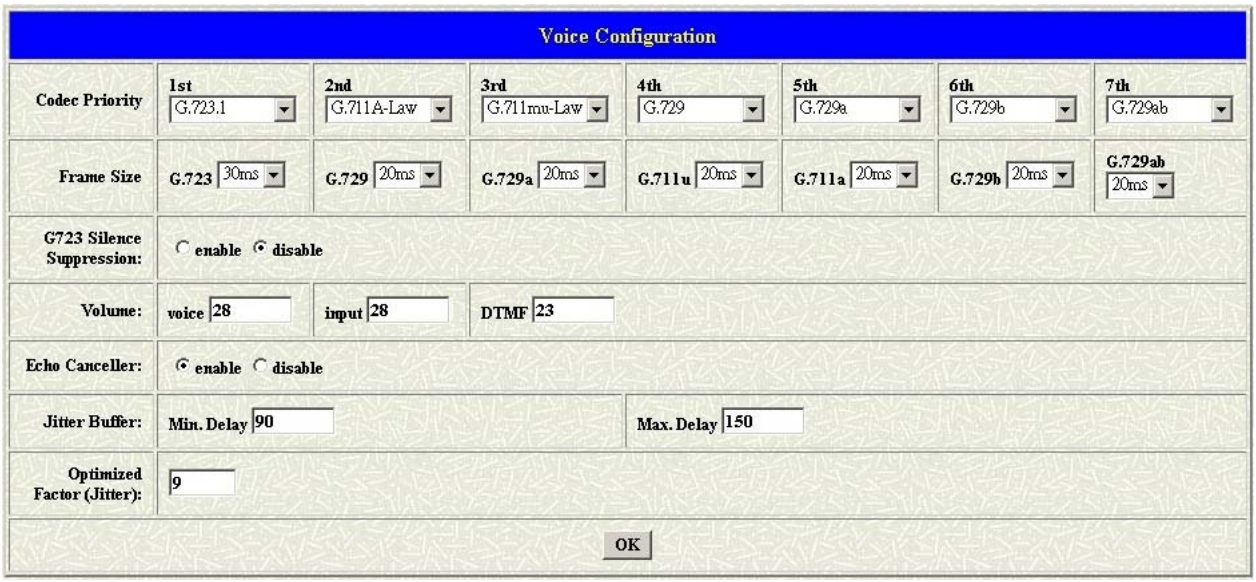


Figure 9-1 Voice Configuration

The following table describes this screen.

Table 9-1 Voice Configuration

LABEL	DESCRIPTION
Codec Priority	Set priority preference of installed codes, G.723, G.711A, G.711U, G.729, G.729A, G.729B, G.729AB.
Frame Size	Set Specify sending packet size, G.723, G.711A, G.711U, G.729, G.729A, G.729B, G.729AB.
G723 Silence Suppression	Select enable/disable for G723 Silence Suppression function.
Volume	Set voice, input, DTMF functions specify the following levels.
Echo Canceller	Setting enable/disable of echo canceller.

LABEL	DESCRIPTION
Jitter Buffer Min. Delay	Setting of jitter buffer min delay.
Jitter Buffer Max. Delay	Setting of jitter buffer max delay.
Optimized Factor (Jitter):	Setting Optimized Factor (Jitter).
OK	Click **OK** to save your changes back to the FXS Gateway volatile memory.

Note: Well the application before you change voice parameters, because this might cause incompatibility.

Chapter 10
Phone Pattern Screen

This Chapter covers FXS Gateway progress tone is configurable. Default tone value is set according to U.S. tone specification. Users may adjust the values according to their own country's tone specification or users-defined tone specification.

10.1 Phone Configuration Overview

The web configurator provides Phone Configuration screen.

10.2 Phone Configuration Screen

Click **Phone Pattern** in the navigation panel and open the **Phone Pattern** Screen.

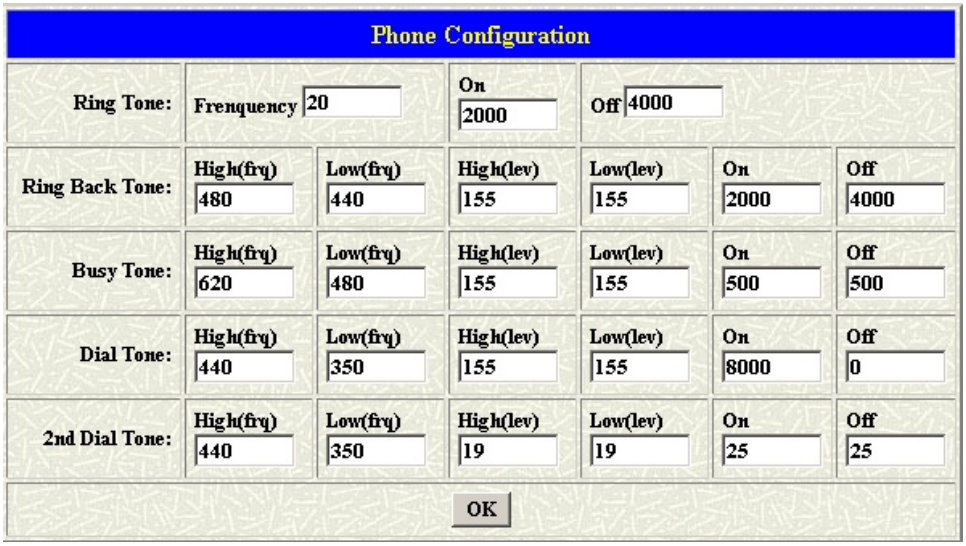


Figure 10-1 Phone Configuration

The following table describes this screen.

Table 10-1 Phone Configuration

LABEL	DESCRIPTION
Ring Tone	Setting the played tone type, when FXS Gateway is receiving a call.
Ring Back Tone	Setting the played tone type, when FXS Gateway receives a Q.931 Alerting message. In condition that FXS Gateway is the originate side.
Busy Tone	Setting the played tone type, when destination is busy.
Dial Tone	Setting the played tone type, when hook off a phone set of workable FXS Gateway.

LABEL	DESCRIPTION
2nd Dial Tone	Set the detective flash range in ms, for example, 300-500 ms.
OK	Click **OK** to save your changes back to the FXS Gateway volatile memory.

Chapter 11
Support Function Screen

This Chapter provides some extra functions that might be needed by users.

11.1 Support Configuration Overview

The web configurator provides Support Configuration screen.

11.2 Support Configuration Screen

Click **Support Function** in the navigation panel and open the **Support Function** Screen.

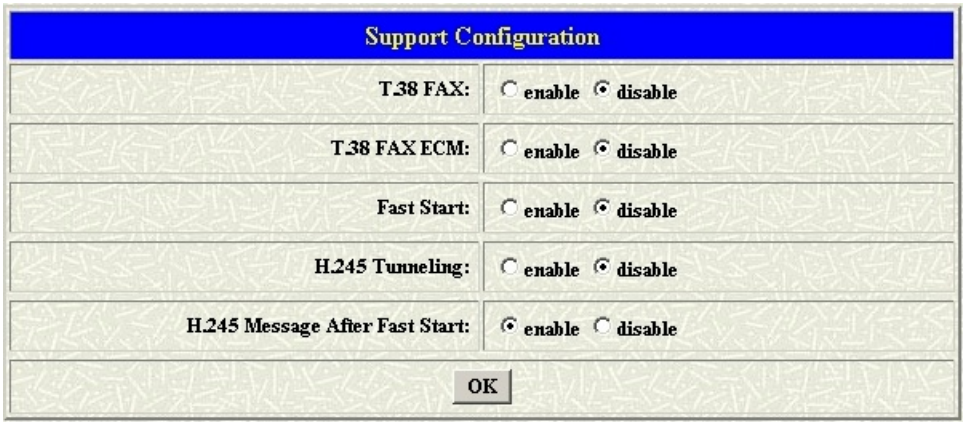


Figure 11-1 Support Configuration

The following table describes this screen.

Table 11-1 Support Configuration

LABEL	DESCRIPTION
T.38 FAX	Select enable/disable for T.38 FAX Function. When T.38 ability is ON, FXS Gateway will automatically defer codec (G.723 or G.729a) to T.38 when FAX signal is detected.
T.38 FAX ECM	Select enable/disable for T.38 FAX ECM Function. Support the error correction in the high speed fax mode
Fast Start	Select enable/disable for Fast Start function. Fast Start function can shorten the connection time if the opposite party also supports Fast Start.
H.245 Tunneling	Select enable/disable for H.245 Tunneling function. If the function is ON, FXS Gateway will send H.245 (Call Control messages) via H.225's (Call Signal messages) link. The function is effective only when both side support h245 tunnel.

LABEL	DESCRIPTION
H.245 Message After Fast Start	Select enable/disable for H.245 Message After Fast Start function. If the function is ON, FXS Gateway will send H.245 messages after Fast Start.
OK	Click **OK** to save your changes back to the FXS Gateway volatile memory.

Note: it is not recommended to change the value in this command, only if users do know well the application. This might cause incompatibility with other devices.

Chapter 12
Phone Book Screen

This Chapter covers Phone Book function allows users to define their own numbers, which mapping to real IP address. It is effective only in peer-to-peer mode. When adding a record to Phone Book, users do not have to reboot the machine, and the record will be effective immediately.

12.1 Phone Book Overview

The web configurator allows you to Set up Phone Book that tell the FXS Gateway how to call management traffic when you configuration P2P mode.

12.2 Phone Book Screen

Click **Phone Book** in the navigation panel and open the **phone Book** Screen.

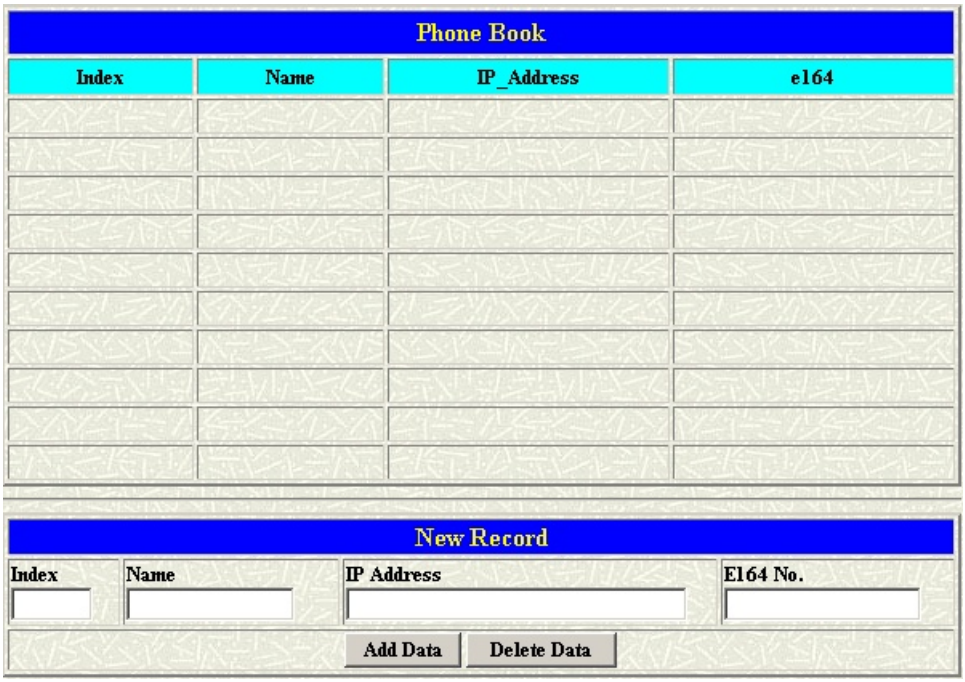


Figure 12-1 Phone Book

The following table describes this screen.

Table 12-1 Phone Book

LABEL	DESCRIPTION
Record List	
Index	The field displays the index number.

LABEL	DESCRIPTION
Name	The field displays the descriptive name.
IP Address	The field displays the IP Address or Domain name.
e164	The field displays the descriptive e164 number.
New Record	
Index	Set up an Index number.
Name	Set up a descriptive name.
IP Address	Set up IP Address or Domain Name.
e164 No.	Set up e164 (telephone) number
Add Data	Add a record to Phone Book.
Delete Data	Delete a record to Phone Book.

Note: The e164 number defined in phone book will fully carry to destination. It is not just a representative number for destination's IP Address. In other words, user dial this e164 number to reach destination, destination will receive the number and find out if it is matched to its e164, including Line number in some particular device.

Chapter 13
Hot Lines Screen

This Chapter covers to set Hotline function must be under Peer-to-Peer mode and switch to hotline mode.

13.1 Bureau Overview

The web configurator provides Bureau screen.

13.2 Bureau Screen

Click **Hot Line** in the navigation panel and open the **Bureau** Screen.

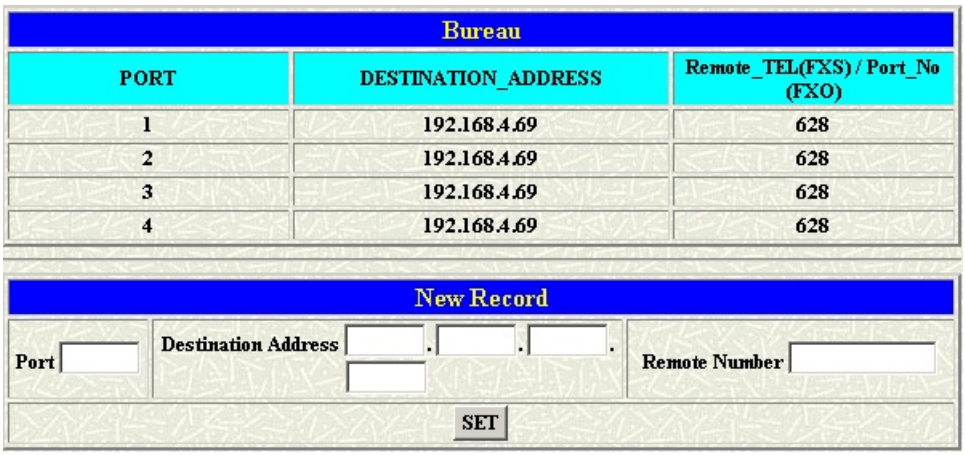


Figure 13-1 Bureau

The following table describes this screen.

Table 13-1 Bureau

LABEL	DESCRIPTION
Bureau	
Port	The field displays the Port number.
Destination Address	The field displays the Destination Address.
Remote_TEL(FXS) Port_No(FXO)	The field displays the Remote TEL number.
New Record	
Port	Set up a port number.
Destination Address	Set up IP Address.

LABEL	DESCRIPTION
Remote Number	Set up Remote Number.
Set	Set a record to Bureau.

Chapter 14
Speed Dial Screen

This Chapter covers Speed Dial information and configuration

14.1 Speed Dialing Overview

The web configurator provides Speed Dialing screen.

14.2 Speed Dialing Screen

Click **Speed Dial** in the navigation panel and open the **Speed Dial List** Screen.

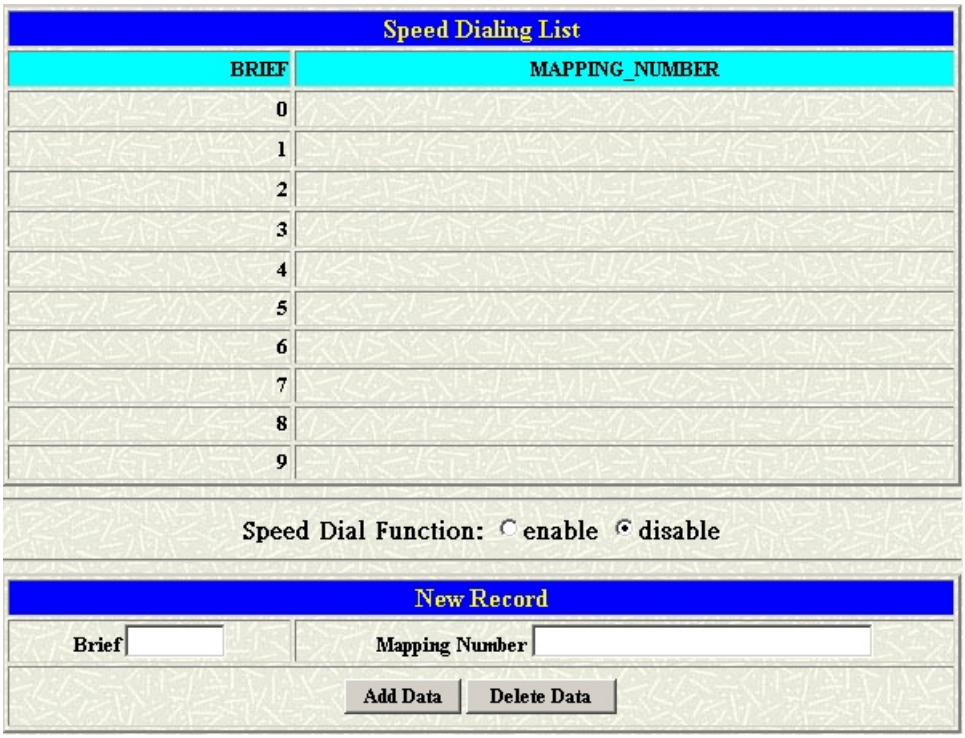


Figure 14-1 Speed Dialing List

The following table describes this screen.

Table 14-1 Speed Dialing List

LABEL	DESCRIPTION
Speed Dialing List	
Brief	The field displays the Brief number.
Mapping Number	The field displays the Mapping Number.
Speed Dialing	Select enable/disable of Speed Dialing function.

LABEL	DESCRIPTION
Function	
New Record	
Brief	Set up a Brief number.
Mapping Number	Set up Mapping number.
Add Data	Add a record to Speed Dialing.
Delete Data	Delete a record to Speed Dialing.

Chapter 15
PPPoE Configuration Screen

This Chapter covers Display PPPoE related information.

15.1 PPPoE Device Configuration Overview

The web configurator provides PPPoE Device Configuration screen.

15.2 PPPoE Device Configuration Screen

Click **PPPoE Configuration** in the navigation panel and open the **PPoE Device Configuration** Screen.

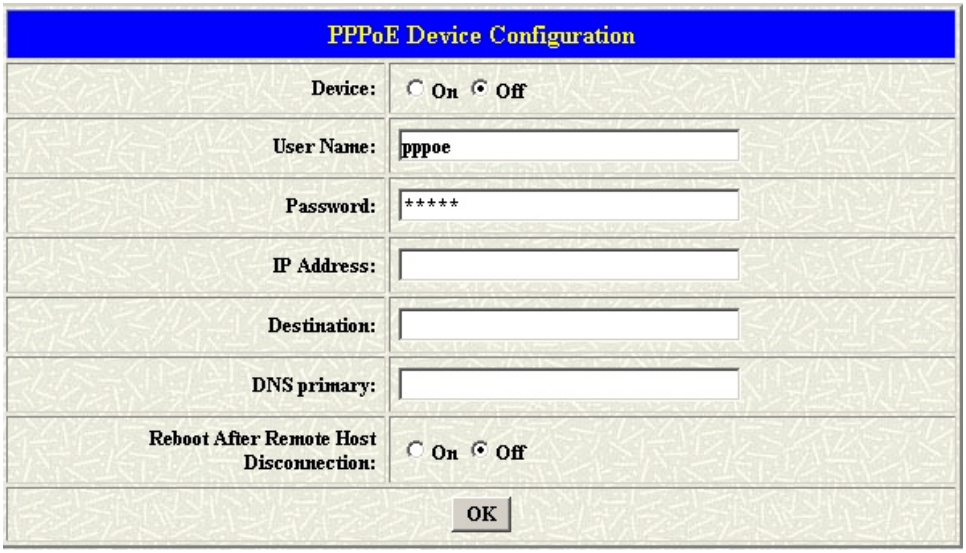


Figure 15-1 PPPoE Device Configuration

The following table describes this screen.

Table 15-1 PPPoE Device Configuration

LABEL	DESCRIPTION
Device	Select on/off of PPPoE device function.
User Name	Enter the User Name of PPPoE Login ID.
Password	Enter the password of PPPoE Login Password.
IP Address	This filed display the IP Address, when you registration PPPoE success.
Destination	This filed display the Destination, when you registration PPPoE success.
DNS primary	This filed display the DNS IP Address, when you registration PPPoE

LABEL	DESCRIPTION
	success.
Reboot After Remote Host Disconnection	Select on/off of reboot after remoter host disconnection function.
OK	Click **OK** to save your changes back to the FXS Gateway volatile memory.

Note: User's could insert any information in IP Address, Destination and DNS Primary.

Chapter 16
IP Packet ToS Screen

This Chapter covers IP Packet ToS (Type of Service)/Differentiated Service configuration.

16.1 TOS Configuration Overview

The web configurator provides TOS Configuration screen.

16.2 TOS Configuration Screen

Click **IP Packet ToS** in the navigation panel and open the **TOS Configuration** Screen.

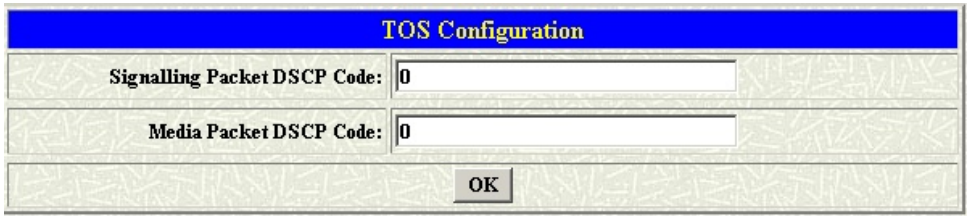


Figure 16-1 TOS Configuration

The following table describes this screen.

Table 16-1 TOS Configuration

LABEL	DESCRIPTION
Signaling Packet DSCP Code	Set the Signaling Packet DSCP code value, the value of is from 0 to 63 e.g.7.
Media Packet DSCP Code	Set the Media Packet DSCP Code, the value of is from 0 to 63 e.g.0.

Chapter 17
Line Status Screen

This chapter explains the Line Status Information Screen.

17.1 Line Status Information Overview

The web configurator provides Line Status Information screen.

17.2 Line Status Screen

Click **Line Status** in the navigation panel to open the **Line Status Information** screen.

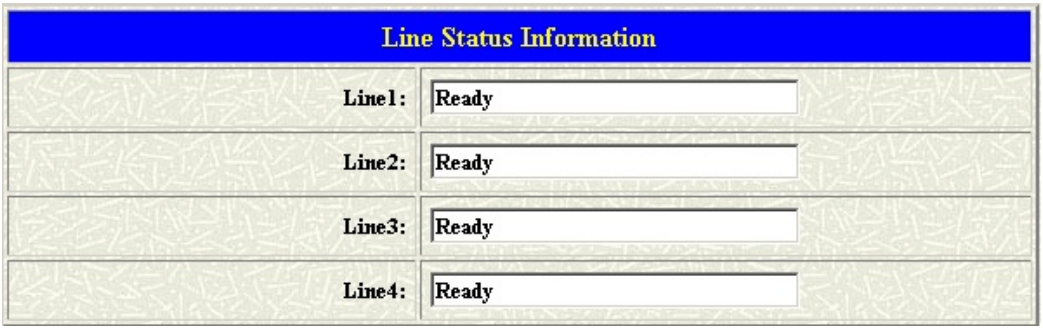


Figure 17-1 Line Status Information

The following table describes this screen.

Table 17-1 Line Status Information

LABEL	DESCRIPTION
Line (1-4)	This field Display line status is Ready or Busy.

Chapter 18
Version and Information Screen

This chapter explains the Version and Information Screen.

18.1 Version and Information Overview

The web configurator provides Version and Information screen to allow you to see FXS Gateway Version Information.

18.2 Version and Information Screen

Click **Version and Information** in the navigation panel to open the **Version and Information** screen.

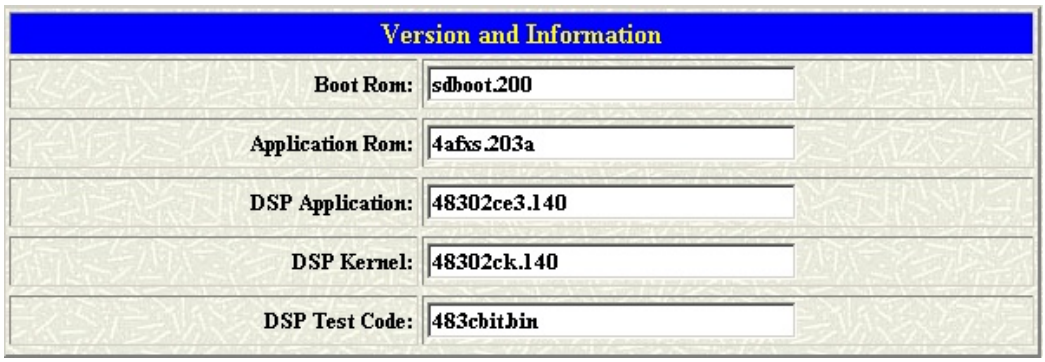


Figure 18-1 Version and Information

The following table describes this screen.

Table 18-1 Version and Information

LABEL	DESCRIPTION
Boot Rom	This field refers to the Boot Rom Version.
Application Rom	This field refers to the Application Rom Version.
DSP Application	This field refers to the DSP Application Version.
DSP Kernel	This field refers to the DSP Kernel Version.
DSP Test Code	This field refers to the DSP Test Code Version.

Chapter 19
Password Screen

This Chapter explains how to change the FXS Gateway password.

19.1 Password Configuration Overview

The **Password** screen allows you to configure the administrator password.

19.2 Password Configuration Screen

Click **Password** in the navigation panel to open the **Password Configuration** screen.
Use the **Password Configuration** to set root and administrator password for the FXS Gateway.

It is highly recommended that you change the default password (“Null”).

Figure 19-1 Password Configuration

The following table describes this screen.

Table 19-1 Password

LABEL	DESCRIPTION
Username	Select root or administrator different options from the drop-down list box.
Current Password	Type the existing system password (“Null” is the default password when shipped).
New Password	Type your new system password.
Confirm New Password	Confirm your new system password for confirmation.
CHANGE	Click **CHANGE** to save your change back to the FXS Gateway volatile memory.
ABORT	Click **ABORT** to begin configuring this page afresh.

Chapter 20
ROM Upgrade Screen

This Chapter explains how to Update FXS Gateway Version.

20.1 ROM Configuration Overview

The web configurator provides Update FXS Gateway ROM Version.

20.2 ROM Configuration Screen

Click **ROM Upgrade** in the navigation panel and open the **ROM Configuration** Screen.

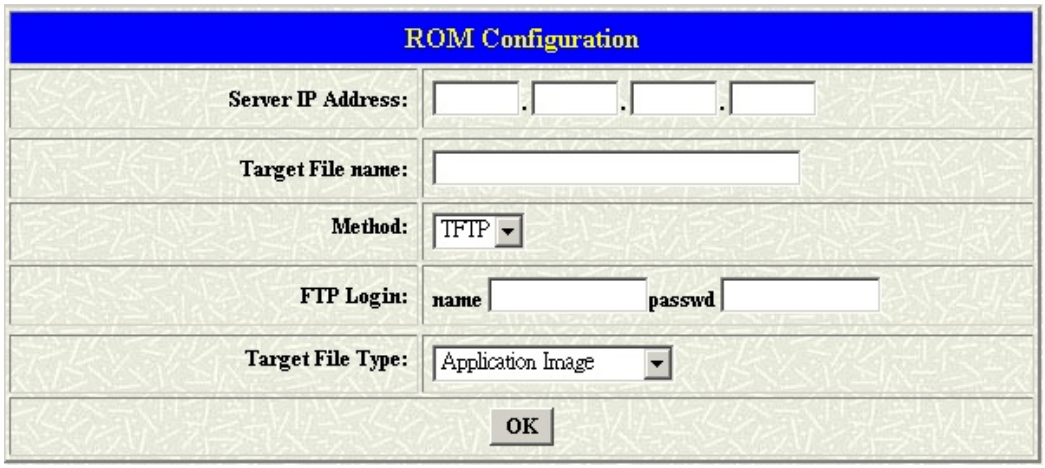


Figure 20-1 ROM Configuration

The following table describes this screen.

Table 20-1 ROM Configuration

LABEL	DESCRIPTION
Server IP Address	Enter the FTP or TFTP Server IP Address.
Target File Name	Enter the file name prepared to upgrade.
Method	Select download method as FTP or TFTP.
FTP Login Name	Enter the FTP Login name (max 14 byte)
FTP Login Password	Enter the FTP Login password (max 14 byte)
Target File Type	Select download Target File Type on 2M Boot Image, DSP Application Image, DSP Core Image, DSP Test Image different options from the drop-down list box.
OK	Click **OK** to save your change back to the FXS Gateway volatile memory.

Chapter 21
Flash Clean Screen

This Chapter covers save change and clean all the user defined value in factory default mode.

21.1 Flash Clean Overview

The web configurator provides Flash Clean screen.

21.2 Flash Clean Screen

Click **Flash Clean** in the navigation panel and open the **Flash Clean** Screen.

Figure 21-1 Flash Clean

The following table describes this screen.

Table 21-1 Flash Clean

LABEL	DESCRIPTION
Clean	Save Changes after configuring FXS Gateway.

Note: It is only executed by user whose login name is root. All configurations in command [ifaddr], [pppoe] will be kept.

Chapter 22
Commit Data Screen

This Chapter covers save change after configuring FXS Gateway.

22.1 Commit Configuration Data Overview

The web configurator provides Commit Configuration Data screen.

22.2 Commit Configuration Data Screen

Click **Commit Data** in the navigation panel and open the **Commit Configuration Data** Screen.

Figure 22-1 Commit Configuration Data

The following table describes this screen.

Table 22-1 Reboot FXS Gateway

LABEL	DESCRIPTION
Commit	Save changes after configuring FXS Gateway.

Chapter 23
Reboot Data Screen

This Chapter covers reboot to reload FXS Gateway in new configuration.

23.1 Reboot FXS Gateway Overview

The web configurator provides Reboot FXS Gateway screen.

23.2 Reboot FXS Gateway Screen

Click **Reboot Data** in the navigation panel and open the **Reboot FXS Gateway** Screen.

Figure 23-1 Reboot FXS Gateway

The following table describes this screen.

Table 23-1 Reboot FXS Gateway

LABEL	DESCRIPTION
Reboot	After commit command, type reboot to reload FXS Gateway in new configuration. The procedure is as below:

Part III:

Command with FXS Gateway

This part gives information on commands to use.

Chapter 24
Command List

This section introduces the command line interface and lists all of the commands.

24.1 Hyper Terminal Setting

A terminal emulator is needed when using RS-232 port to configure FXS Gateway. There are kinds of terminal emulator software. Here, we use Microsoft HyperTerminal to depict how to set up terminal emulator:

Step 1. Execute the Hyper Terminal program, and then the following windows will pop-up on the screen. (START→Program files→Accessories→Communication→Hyper Terminal)

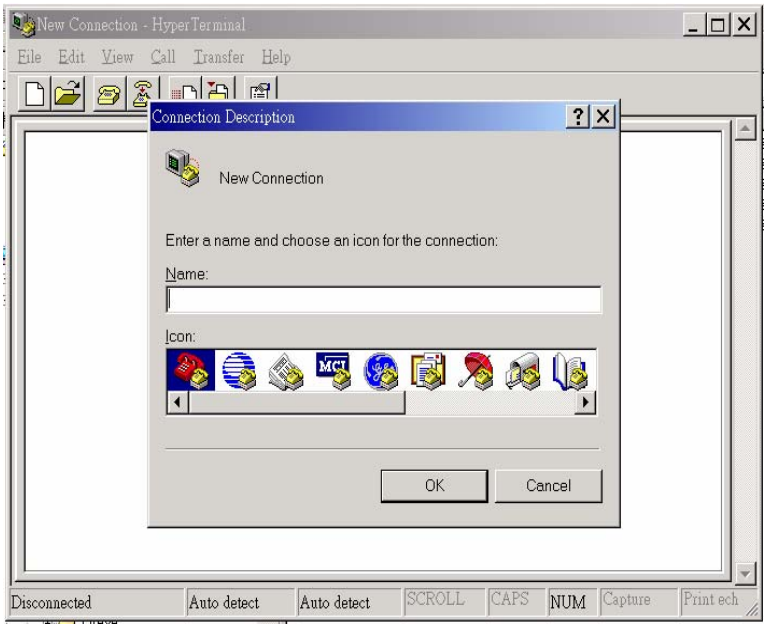


Figure 24-1 Connection Description

Step 2. Define a name such as **voip** for this new connection.

Figure 24-2 Connection Description

Step 3. After pressing OK button, the next window appear, and then choose COM1/2 Port, which you are going to use.

Figure 24-3 Connect To

Step 4. Configure the COM Port Properties as following: Bits per second: 9600, Flow control: None, Press **OK** button, and then start to configure FXS Gateway.

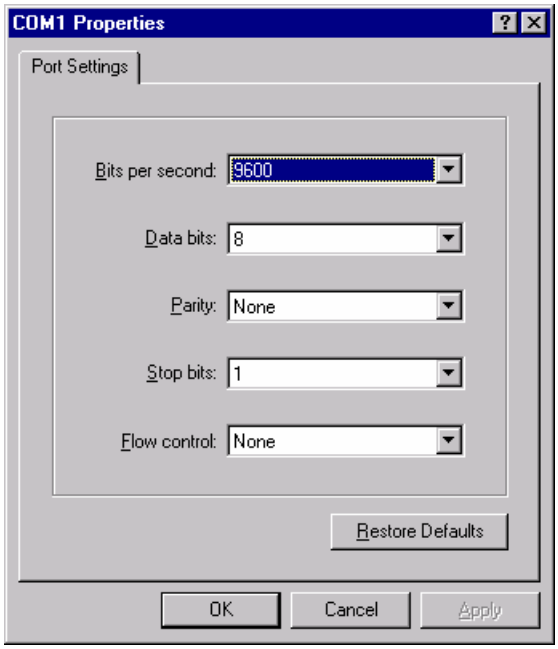


Figure 24-4 Com Properties

24.2 Power Up Your FXS Gateway

At this point, you should have connected the console port, the LAN Port, the WAN port and the power port to the appropriate devices or lines. Plug the power adapter into a wall outlet. The Power LED should be on. The **Status LED** will come on after the system tests are complete. The WAN LED and one of the LAN LEDs come on immediately after the **Status LED** come on, if connections have been made to the LAN and WAN ports.

Initial Screen

When you power on your FXS Gateway it performs server internal tests as well as line initialization.
After the tests, the FXS Gateway asks you to enter the Login, as shown.

```
Attached TCP/IP interface to cpm unit 0
Attaching interface lo0..done

Please wait while system is initializing ..... SAttached TCP/IP interface to cpm unit 0
Attaching interface lo0..done

HTTPD initialized..
cmInitialize succeed!
Ras port:1024
CallSignal port:1720
```

```
GK mode selected.

  AC4804[0] is ok
  AC4804[1] is ok
  successful 2 2
  Initialize OSS libraries..OK!
VP v1.42 stack open sucessfully.

login:
```

Figure 24-5 Initial Screen

Entering Login

For you first login, enter the login **root** and default password "**Null**". As you type the password, the screen displays and (*) for each character you type.

```
successful 2 2
  Initialize OSS libraries..OK!
VP v1.42 stack open sucessfully.

login:root
Welcome to Terminal Configuration Mode
Please enter your configuration item

usr/config$
```

Figure 24-6 Login Screen

Note:

login: root or administrator is the default login name and there is no password needed.

Set Password

To set your own password in root login name, just input command "passwd –set root ****". For example, if password of root account is prepared as "voip", configuration is

```
usr/config$ passwd -set root voip

Setting
Login: root
Password: voip
OK
```

```
usr/config$
```

Figure 24-7 Change password Screen

24.3 Command Structure with FXS Gateway

You can use text command lines for software configuration. The rules of the commands are listed next. The command keywords are in courier new font.

1. The command keywords must be entered exactly as shown, that is, no abbreviations are allowed.
2. “Command” refers to a command used in the command line interface.

24.3.1 Command Structure with FXS Gateway

The FXS Gateway uses a two-level command structure with the FXS Gateway. The commands related to one subsystem are group under a primary command of that subsystem, for instance, to configure the parameters, you must fist enter the **usr/config$** subsystem by entering the ifaddr command. When you are in a subsystem, the system reminds you by including the subsystem name in the command prompt, for example,
usr/config$

24.3.2 Set up IP Address

Use command “ifaddr” to configure Gateway’s IP Address and related information. For example

```
usr/config$ ifaddr –ip 10.1.1.1 –mask 255.2555.255.0 –gate 10.1.1.254
```

Description: This is to configure FXS Gateway’s IP Address as “10.1.1.1”; subnet mask as “255.255.255.0”; default router gateway as “10.1.1.254”.

Note: After configured the IP Address and did the [commit], then [reboot] process, user can start to do other configurations via HTTPD.

Application Version 200 supports PPPoE function for user to set up the login ID and password to connect to Internet. Please refer to Chapter 24.4.5 for how to set up PPPoE.

24.3.3 Application Mode Configuration

It is including Basic mode, such as Gatekeeper and Peer-to-Peer, and Advanced mode, such as Hotline mode and IP-Sharing mode. It will be detailed in the next Chapter.

24.3.4 Saving Your Configuration

Save the change of configurations for FXS Gateway and apply the new configurations by rebooting the device.

Step 1. Confirm the changed configurations; input “***commit”*** and press “***enter”*** to save it.

Step 2. Input “***reboot”*** then press, “***enter”*** to restart FXS Gateway.

Step 3. After around 40 seconds, FXS Gateway will take effect in new configurations. These commands save all system configuration into nonvolatile memory. Nonvolatile memory refers to the FXS Gateway storage that remains even if the FXS Gateway power is turned of. Run Time (memory) is lost when the FXS Gateway power is turned off. You must use the command to save any configuration that you make, otherwise the FXS Gateway will return to its default setting when it is restarted.

Do not turn off your FXS Gateway or remove the FXS Gateway While saving your configuration.

24.4 Application modes

This Chapter will introduce the four application modes users often use.
Particularly the Gatekeeper and Peer-to-Peer mode are the basic application mode. User would like to set as advanced application mode, such as Hotline Mode and Behind IP-Sharing mode, please refer to the basic application mode for more information.

24.4.1 Gatekeeper mode

User has to prepare a Gatekeeper Program.
To assign a gatekeeper address for FXS Gateway, and define its own registered ID and phone number. For detail, please refer to Chapter 24.7.13 [h323] command.
Several important H323 parameters are listed below when setting gatekeeper mode:

"**–gk**", **"gwtype", "-prefix"**, "**–line1**", and "**–line2**".

An example is demonstrated below:

```
usr/config$ h323 –gk 10.2.2.2 –prefix 1 –line1 11 –line2 12
```

Memo: This is to set gatekeeper IP address as "10.2.2.2", prefix as "1", line 1 number as "11", and line 2 number as "12". The gateway type is kept as default value as **Gateway Type**.

Note: *For the successful dial plan designed in **Gateway Type**, the line1 & line2 number must follow the prefix number. For example, if the prefix is set as 002, line1 & line2 can be set as 0021,0022. It is an important dial plan in gatekeeper mode. On the other hand, if device registered as **Terminal Type**, there is no prefix needed to be defined.*

24.4.2 Peer-to-Peer Mode

Peer-to-Peer Mode allows users to call other VoIP devices without using a gatekeeper. When in Peer-To-Peer mode, FXS Gateway will send SETUP message directly to the destination IP address once the dial is finished. Users have 2 methods of dial. One is IP Address dialing, and the other is **PhoneBook** dial, which we will describe later. When using IP address as destination phone number, press "*" as "." in IP address expression, and press "#" when dial is

finished. When using PhoneBook, users can dial predefined phone number, and press "#" as end of dial. Or, users can use SpeedDial button, which is mapping to user defined PhoneBook, Button1 to PhoneBookIndex1, Button to PhoneBookIndex2…etc.

To configure Peer-To-Peer Mode in FXS Gateway, follow the steps below:

Step 1. Set Peer-To-Peer Mode, using "h323" command

```
usr/config$ h323 –mode 1
```

Memo: mode 1 is for Peer-To-Peer (non-gk) mode, while mode 0 is for GK mode.

Step 2. Configure PhoneBook, using "pbook" command.

Users can refer to chapter 24.7.9 [pbook] command for more information.

```
usr/config$ pbook –add name TEST1 ip 10.1.1.1 e164 10
```

Memo: The command is to add a record onto PhoneBook. After the command completed, you can type "pbook –print" to see if the input record is correct.

When adding a record to PhoneBook, users do not have to reboot the machine, and the record will be effective immediately. For phonebook configuration, please refer to Chapter 24.7.9.

Note:

1. *The e164 number defined in Pbook command will be completely carried to destination device. It is said this number shall be matched the destination device's e164 number if BusyForward function is disable.*
2. *BusyForward function at destination site. (The function is only for FXS series)*
   a. *Enable [sysconf –bf 1], then destination device will accept any number, even it is not matched to Line number. The called device will ring in round-robin.*
   b. *Diable [sysconf –bf 0], then only matched Line number is accepted.*

24.4.3 Hotline Mode

Hotline mode is particularly applied behind Peer-to-Peer mode; it is not workable in Gatekeeper mode. The Hotline Mode is applied in limited two peers. User just picks up the phone set and then hears ring back tone or dial tone depended on configurations of destination device.

Usage:

Switch to Peer-to-Peer Mode, then enable the Hotline Mode. Finally create a Hotline table.

```
usr/config$ h323 –mode 1
usr/config$ sysconf –service 2
usr/config$ bureau –hotline 1 10.2.2.2 201
usr/config$ bureau –hotline 1 10.2.2.2 6
```

Hotline table usage: Select a line for destination IP Address and its Port / Extension number

1. FXS Gateway:

   If destination device is FXS device, such as FXS Gateway, the table should be build

like below example.

[bureau –hotline Host_Line Remote_IP Remote_Line_Number] For example,

[bureau –hotline 1 210.59.1.1 111]

It is said picking up the Phone Line 1, and then destination gateway will ring.

2. FXO Gateway

If destination device is FXO device, such as 6FXO Gateway, it is important of that the configuration is in Line-to-Line mode or Hotline mode. Please refer to FXO user manual for more information about two modes.

a. Line-to-Line:

[bureau –hotline Host_Line Remote_IP Remote_Line] For example,

[bureau –hotline 1 210.59.1.1 6] (6 means the Sixth port of FXO Gateway, caller will hear dial tone, then dial to where PBX allowed to.)

b. Hotline:

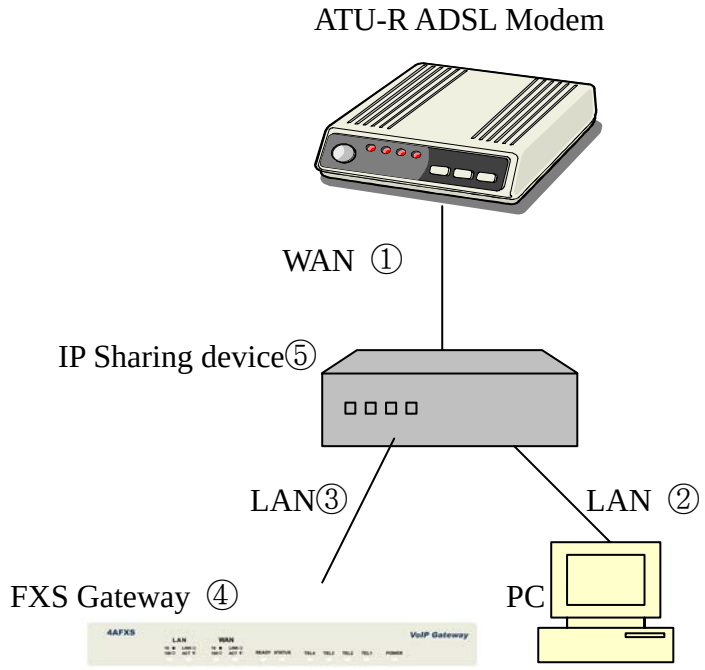
[bureau –hotline Host_Line Remote_IP Remote_Line_Number] For example,

[bureau –hotline 1 210.59.1.1 305] (305 means the extension number user define to dial out)

24.4.4 Behind IP-Sharing Mode

The function is for user whose network environment is behind IP Sharing device. It is said FXS Gateway is connected to the IP Sharing device.

An example such as ADSL network is in the following.



① The WAN IP Address obtained from ADSL has two kinds of methods.

One is fixed IP Address, while user applies for one or more fixed IP Addresses.

Another is dynamic IP Address while user applies for dial-up connection way.

② The LAN IP Address of User's PC can be set as DHCP client in order to gain an valid one.

③ Anther IP Address for FXS Gateway must be set as an fixed one in order for that IP Sharing device pass forwarding the relevant information from WAN to LAN. Besides, a valid IP Address which meets the IP Sharing device (LAN site) is the element.

④ FXS Gateway must enable the IP Sharing function for the fixed / dynamic WAN IP Address.

Fixed IP Address usr/config$ ifaddr –ipsharing 1 210.11.22.33

Dynamic IP Address usr/config$ ifaddr –ipsharing 1

Note:

With Dynamic WAN IP Address, a valid Gatekeeper for FXS Gateway to get register on is a must. In other word, it is not workable in Peer-to-Peer mode while dynamic WAN IP Address.

⑤ IP Sharing device must have a function to do IP/Port mapping. Some is named as DMZ, some is named as virtual server whatever. The VoIP messages from WAN have to completely pass forward to the LAN. It is said if the FXS Gateway is assigned a virtual fixed IP Address such as 192.168.1.5, IP Sharing device must forward the VoIP messages to 192.168.1.5.

Important Note: *For some IP-Sharing devices do not support DMZ or virtual server function, but allowed user to allocate some particular TCP/UDP port range.*

While a complete H.323 communication is established, the following ports are possibly to be used:

TCP port:

Q.931/H.225 → 1720

H.245 → dynamic, but range 1025 ~ 1029 (not in use if Fast Start or Tunnel mode is activated)

UDP port:

RAS → device: 1024, Gatekeeper: 1719

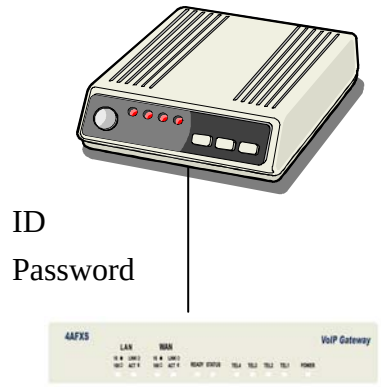
RTP/RTCP → adjustable, default = 16384 ~ (16384 + 4*Line Numbers)

Note:

The port number allocation is for reference only. RTP/RTCP port may allocate on unexpected port. It is better to define the port in wider range than limited range

24.4.5 PPPoE Mode

ATU-R ADSL Modem



FXS Gateway

Press [?] or [help] to list all commands, including PPPoE one.

Step 1. pppoe –dev 1 : switch the IP configurations to PPPoE

Step 2. pppoe –open : open the connection

Step 3. pppoe –id : input the user ID provided by your ISP

Step 4. pppoe –pwd : input the password provided by your ISP

Step 5. pppoe –reboot : Reboot the device once after disconnection

After the configurations are done, [commit] and [reboot] the device.

24.4.6 H.450 Call Hold, Transfer and Forward Mode

FXS Gateway provides H.450 function including call hold, transfer and forward. Please be noted that both calling and called site have to support H.450 feature. For call forward function, it only works under GK mode. Of course, GK must support H.450 feature, such as Call Manager 1.3.

To enable H.450 feature, it is better for user to prepare a telephone set supported “FLASH” function on keypad. If telephone set does not support FLASH function on keypad, user is possible to click the Hook quickly by sending FLASH message. The default FLASH value for FXS Gateway is between 100ms to 300 ms. It is said the value of Gateway is subject to the telephone set.

Call Hold – press [FLASH]

By pressing the FLASH after making a call, both site shall hear the 2nd dial tone generated by FXS Gateway. To retrieve the call back, just press the FLASH again.

Call Transfer – press [FLASH], then [transferring number]

For example, A call B, B transfer to C

A make call to B, B press FLASH. A and B hear 2nd dial tone. B presses the C’s number. C ringing and A hear the ringback tone. B hang up its call. A and C make call.

Call Forward –

- **Activate - *147#**
- **Deactivate - *258#**
- **Busy Forward – [Forward No.] *#**
- **No response/ Answer – [Forward No.]*1#**
- **Unconditional – [Forward No.]*2#**

It is important to send an activate/deactivate call forward message before setting up the forward number. This function is only available under GK mode, and the GK supports H.450 Call Forward function. There are three conditions for user to set a forwarding number.

Step 1. Busy Forward – while line is engaged or phone set is off-hook.

Step 2. No response / Answer – while no one answer the call.

Step 3. Unconditional – forward it unconditionally.

24.5 How to upgrade

Before you start downloading

1. TFTP server program is available to obtain from technical support website.
2. Please create one directory for TFTP server program on one local PC, and then execute it. Put the file, which prepared to upgrade in the same directory.
3. Please confirm Host PC, which is installed as TFTP / FTP server and device is in available network.
4. Remember the current configuration, such as [pbook], [h323].

Upgrade steps: (Telnet to remote device)

Step 1. **[rom –print]**

It will list current version and default download method. Please check the **Application Rom** in particular, it is showed version list, as well as the most common one you have to upgrade. If there is additional Rom noted, one Rom, which size around 2MB, would be provided for user to upgrade all of Roms.

General speaking, App Rom is named including product name and version and size is under 1MB, such as **2fxs.115a.** 2MB Rom is named such as **2m2fxs.115a**. Please be very careful of the prepared Rom file while upgrading.

Step 2. Prepare FTP or TFTP server ready.

A. FTP server:

[rom –method 1] to choose FTP method, and input the FTP login and password by [rom –ftp id password]

B. TFTP server:

It is default value, [rom –method 0] to choose TFTP method.

Step 3. Different Rom uses different command.

A. Application Rom:

usr/config$ rom –app –s 192.168.1.1 –f 2fxs.114

B. 2MB Rom:

usr/config$ rom –boot2m –s 192.168.1.1 –f 2fxs.114

Description: -app / -boot2m means the prepared upgrade Rom; -s means where the TFTP / FTP server IP Address is; -f is the Rom file name.

Step 4. Download complete

A. Application Rom:

Command [flash -clean] to clear old configurations. It will keep all configurations in [ifaddr] and [pppoe]. (Note: old version: such as 115a, will only keep IP Address and MAC Address)

B. 2MB Rom:

If the version list is older than 113, all configurations will be back to default value, including IP Address. In other word, user has to set IP Address and MAC Address before [reboot] the device; otherwise, user cannot access to device any more via Telnet.

The version 200 and above support to keep every configurations after upgrade.

Steps 4.1: Find out MAC Address:

There are 12 digits on label on the back panel of the device, or command as

usr/config$ ifaddr –ifshow (find the list information of Ethernet address, it is MAC Address.

usr/config$ setmac (set as 2 digits as a group)

00

01

a8

00

xx

xx

if confirm, press y

Steps 4.2: Set IP Address

usr/config$ ifaddr –ip xxx.xxx.xxx.xxx –mask xxx.xxx.xxx.xxx –gate xxx.xxx.xxx.xxx (Please refer to Chapter 24.7.6)

Steps 4.3: Hardware version confirmation

Upgrade 2MB Rom may change the hardware column. If it is not as the same as the one, which is found on the label of back panel, please command as

usr/config$ rom –hwver x.x

Steps 4.4: [commit], [reboot]

24.6 Commands with FXS Gateway

The following table lists all of the commands that you can use with the FXS Gateway. Refer to the following chapters for descriptions of commonly used commands.

This user's guide describes commands that are helpful for configuring the FXS Gateway.
Using commands not documented in the user's guide can damage the unit and possibly render it unusable.

Table 24-1 Commands with FXS Gateway

Command	DESCRIPTION
help	help/man/?[command]
quit	quit/exit/close
debug	show debug message
reboot	reboot local machine
flash	clean configuration from flash rom
commit	commit flash rom data
ifaddr	internet address manipulation
time	show current time
ping	test that a remote host is reachable
pbook	Phonebook information and configuration
ddns	Dynamic DNS update manipulation
pppoe	PPPoE stack manipulation
sysconf	System information manipulation
h323	H.323 information manipulation
pt	RTP payload type configuration and information
sysinfo	System information
prefix	Prefix drop/insert information manipulation
voice	Voice information manipulation

Command	DESCRIPTION
support	Special Voice function support manipulation
tos	IP Packet ToS (Type of Service) values
phone	Setup of call progress tones and ringing (SLIC control)
bureau	Bureau line information manipulation
rom	ROM file update
passwd	Password setting information and configuration
sdial	SpeedDial information configuration

24.7 System Commands Overview

24.7.1 [quit]

Type **quit** will quit the FXS Gateway configuration mode. And turn back to login prompt.

```
usr/config$ quit

Disconnecting..
login: root
Welcome to Terminal Configuration Mode
Please enter your configuration item

usr/config$
```

Figure 24-8 Quit Commend List

Note: *It is recommended that type the "quit" command before you leave the console. If so, FXS Gateway will ask password again when next user connects to console port.*

24.7.2 [debug]

Open debug message will show up specific information while Gateway is in operation. After executing the debug command, it should execute command **debug -open** as well. One example is demonstrated below.

```
usr/config$ debug

Debug message information and configuration
Usage:
debug [-add type1 [[type2]..]] | -open | -close | -status
```

```
    -status      Display the enabled debug flags.
    -add          Add debug flag.
    -delete      Remove specified debug flag.
    -open         Start to show debug messages.
    -close       Stop showing debug messages.
Example:
    debug -add h323 h323vp
    debug -open

usr/config$
```

Figure 24-9 Debug Commend List

In this example, user open debug flags including h323, vp, h323vp.

```
usr/config$ debug -add h323 vp h323vp
usr/config$ debug –open
```

Parameter Usages:

-status	Display the enabled debug flags.
-add	Add debug flag.
	-- h323: h323 related information
	-- vp: voice related information
-delete	Remove specified debug flag.
-open	Start to show debug messages.
-close	Stop showing debug messages.

24.7.3 [reboot]

After commit command, type reboot to reload FXS Gateway in new configuration. The procedure is as below:

```
usr/config$ reboot

..Attached TCP/IP interface to cpm unit 0
Attaching interface lo0..done

HTTPD initialized..
cmInitialize succeed!
Ras port:1024
```

```
CallSignal port:1720
GK mode selected.

 AC4804[0] is ok
 AC4804[1] is ok
 successful 2 2
 Initialize OSS libraries..OK!
VP v1.42 stack open sucessfully.

login:
```

Figure 24-10 Reboot Commend List

24.7.4 [flash]

Save changes after configuring FXS Gateway.

```
usr/config$ flash

Flash memory information and configuration
Usage:
flash -clean

Note:
        This command will clean the configuration stored in
        the flash and reboot it.

usr/config$
```

Figure 24-11 Flash Commend List

Parameter Usages:

-clean clean all the user defined value, and reboot FXS Gateway in factory default mode.

Note: *It is recommended that use "flash –clean" after application firmware id upgraded.*

Warning*: It is only executed by user whose login name is root. All configurations in command [ifaddr], [pppoe] will be kept*

24.7.5 [commit]

Save changes after configuring FXS Gateway.

```
usr/config$ commit
```

```
This may take a few seconds, please wait..
Commit to flash memory ok!

usr/config$
```

Figure 24-12 Commit Commend List

Note: *Users shall use commit to save modified value, or they will not be activated after system reboot.*

24.7.6 [ifaddr]

Configure and display FXS Gateway network information.

```
usr/config$ ifaddr

LAN information and configuration
Usage:
ifaddr [-print]|[-dhcp used]|[-sntp mode [server][-cmcenter IPaddress]]
ifaddr [-ip ipaddress] [-mask subnetmask] [-gate defaultgateway]

    -print      Display LAN information and configuration.
    -ip         Specify IP address.
    -mask       Set Internet subnet mask.
    -gate       Specify default gateway IP address
    -dhcp       Set DHCP client service flag (On/Off).
    -http       Set HTTP port number.
    -dns        Set DNS server IP address.
    -sntp       Set SNTP server mode and specify IP address.
    -timezone   Set local timezone.
    -ipsharing Specify usage of an IP sharing device and specify IP address.
    -ipchange   Change IP address when using IP sharing function.
    -cmcenter   Specify IP address of management center.
Note:
    Range of IP address setting (0.0.0.0 ~ 255.255.255.255).
    DHCP client setting value (On=1, Off=0). If DHCP set to 'On',
    Obtain a set of Internet configuration from DHCP server assgined.
    SNTP mode (0=no update, 1=specify server IP, 2=broadcast mode).
Example:
    ifaddr -ip 210.59.163.202 -mask 255.255.255.0 -gate 210.59.163.254
```

```
    ifaddr -dhcp 1
    ifaddr -http 8080
    ifaddr -dns 1 168.95.1.1
    ifaddr -sntp 1 210.59.163.254
    ifaddr -ipsharing 1 210.59.163.254
    ifaddr -ipchange 0
usr/config$
```

Figure 24-13 Ifaddr Commend List

Parameter Usages:

-print	print current IP setting and status
-ip	assigned IP address for FXS Gateway
-mask	internet subnet mask
-gate	IP default gateway
-dhcp	Dynamic Host Configuration (1 = ON; 0 = OFF)
-sntp	Simple Network Time Protocol (1 = ON; 0 = OFF) When SNTP function is activated, users have to specify a SNTP server as network time source. An example is demonstrated below:
-timezone	set local time zone according to GMT

```
usr/config$ ifaddr -sntp 1 10.1.1.1
While 10.1.1.1 stands for SNTP server's IP address.
```

-ipsharing	To specify a global fixed IP address, user can add this IP address in the command. *usr/config$ ifaddr -ipsharing 1 210.11.22.33* If the IP address is not a fixed one, the dedicated IP address is not necessary in the command. However, dynamic IP Address is not working in Peer-to-Peer mode. It only supports our Call Manager. *usr/config$ ifaddr -ipsharing 1*
-cmcenter	Specify a management center IP Address. We will provide a management center program to do centralized control for all devices.

24.7.7 [time]

When SNTP function of FXS Gateway is enabled and SNTP server can be found as well, type **time** command to show current network time.

```
usr/config$ time
Current time is WED SEP 17 12:36:49 2003
```

```
usr/config$
```

Figure 24-14 Time Commend List

24.7.8 [ping]

Use **ping** to test whether a specific IP is reachable or not.
For example: if 192.168.1.2 is not existing while 210.63.15.32 exists. Users will have the following results:

```
usr/config$ ping 192.168.1.2
no answer from 192.168.1.2
usr/config$ ping192.168.1.254
PING 192.168.1.254: 56 data bytes
64 bytes from 192.168.1.254: icmp_seq=0. time=5. ms
64 bytes from 192.168.1.254: icmp_seq=1. time=0. ms
64 bytes from 192.168.1.254: icmp_seq=2. time=0. ms
64 bytes from 192.168.1.254: icmp_seq=3. time=0. ms
----192.168.1.254 PING Statistics----
4 packets transmitted, 4 packets received, 0% packet loss
round-trIP (ms)    min/avg/max = 0/1/5
210.63.15.32 is alive
usr/config$
```

Figure 24-15 Ping Commend List

24.7.9 [pbook]

Phone Book function allows users to define their own numbers, which mapping to real IP address. It is effective only in peer-to-peer mode. When adding a record to Phone Book, users do not have to reboot the machine, and the record will be effective immediately.

```
Phonebook information and configuration
Usage:
pbook [-print [start_record] [end_record]]
pbook [-add [IP IPaddress] [name Alias] [e164 phonenumber][drop digit][insert pr
efixstring]]
pbook [-search [IP IPaddress] [name Alias] [e164 phonenumber]]
pbook [-insert [index] [IP IPaddress] [name Alias] [e164 phonenumber][drop digit
][insert prefixstring]]
pbook [-delete index]
pbook [-modify [index] [IP IPaddress] [name Alias] [e164 phonenumber][drop
digit][insert prefixstring]]
```

```
    -print        Display phonebook data.
    -add          Add an record to phonebook.
    -search       Search an record in phonebook.
    -delete       Delete an record from phonebook.
    -insert       Insert an record to phonebook in specified position.
    -modify       Modify an exist record.
Note:
    If parameter 'end_record' is omited, only record 'start_record' will be disp
lay.
    If   both parameters 'end_record' and 'start_record' are omited, all records
will be display.
    Range of IP address setting (0.0.0.0 ~ 255.255.255.255).
    Range of index setting value (1~100),
    drop : 0:Disable / 1:Enable
Example:
    pbook -print 1 10
    pbook -print 1
    pbook -print
    pbook -add name Test IP 210.59.163.202 e164 1001
    pbook -insert 3 name Test IP 210.59.163.202 e164 1001 drop 1 insert 1234
    pbook -delete 3
    pbook -search IP 192.168.4.99
    pbook -modify 3 name Test IP 210.59.163.202 e164 1001

usr/config$
```

Figure 24-16 Phone Book Commend List

Parameter Usages:

-print print out current contents of Phone Book. Users can also add *index number*, from 1 to 100, to the parameter to show specific phone number.

Note: <index number> means the sequence number in phone book. If users do request a specific index number in phone book, FXS Gateway will give each record a automatic sequence number as index.

-add add a new record to phone book. When adding a record, users have to specify ***name***, ***IP***, and ***e164*** number to complete the command.

-search search a record in phone book. The searching criteria can be ***name***, ***IP***, or

e164.

-delete delete a specific record. “pbook –delete 3” means delete **index 3** record.

-insert add a new record and force to assign a specific index number for it.

-modify modify an existing record. When using this command, users have to specify the record’s index number, and then make the change.

PhoneBook Rules:

The e164 number defined in phone book will fully carry to destination. It is not just a representative number for destination’s IP Address. In other words, user dial this e164 number to reach destination, destination will receive the number and find out if it is matched to its e164, including Line number in some particular device.

24.7.10 [pppoe]

Display PPPoE related information.

```
PPPoE device information and configuration
Usage:
pppoe [-print]|[-open]|[-close]
pppoe [-dev on/off][-id username][-pwd password]
    -print      Display PPPoE device information.
    -dev        Enable(=1) or Disable(=0) device.
    -open       Open PPPoE connection.
    -close      Disconnect PPPoE connection.
    -id         Connection user name.
    -pwd        Connection password.
    -reboot     Reboot after remote host disconnection.
```

Figure 24-17 PPPoE Commend List

Parameter Usages:

-print print PPPoE status.

-dev Enable PPPoE Dial-up function

-open Open the connection

-close Close the connection

-id Input the User name ID provided by ISP

-pwd Input the User name password provided by ISP

-reboot Reboot the PPPoE connection.

24.7.11 [ddns]

The dynamic DNS service information and configuration

```
usr/config$ddns

The dynamic DNS service information and configuration
Usage:
ddns [-print]
ddns [-enable 0/1]
ddns [-serve Address] [-hostname Name] [-id ID]
        [-passwd Password]
        [-checkIP option] [-checkIPsrv Address]
        [-delay time]
        [-force IP]

      -print            Display Dynamic DNS information and configuration.
      -enable           1:Enabled/0:Disable the dynmaic DNS service.
      -server           Specify DDNS server address.
      -hostname         Registered domain name.
      -id               Registered account ID.
      -passwd           Registered account password.
      -checkIP          1:Enabled/0:Disable check the host current IP address.
      -checkIPsrv1      Specify IP address check server.
      -checkIPsrv2      Specify secondary IP address check server.
      -delay            Setting the service delay time.(1~59 minutes or 1~24 horus)
      -force            Force execute the dynamic DNS service.
Example:
      ddns -print
      ddns -enable 1
      ddns -server member.dyndns.org -hostname IPphone.dyndns.org
      ddns -delay 30 m (30 minutes)
      ddns -delay 12 h (12 hours)
      ddns -force 11.22.33.44

usr/config$
```

Figure 24-18 DDNS Commend List

Parameter Usages:

-enable enable the DDNS function

-server	enter the server address of the DDNS server you use
-hostname	enter the domain name address which you get from the DDNS server
-id	key in your id
-passwd	key in your password
-checkIP	enable or disable the check current user's IP address
-checkIPsrv1	enter the IP address of the check server
-checkIPsrv2	the secondary IP address of the check server
-delay	service delay time
-force	execute the DDNS function all the times

Note: *Support DDNS Server: www.3322.org, www.dyndns.org.*

24.7.12 [sysconf]

This command displays system information and configurations.

```
usr/config$ sysconf

System information and configuration
Usage:
 sysconf [-plan digit][-idtime digit][-service type][-bf digit]
          [-callalive flag][-keypad dtmf][-prefixsw digit][-faxrdd digit]
          [-prefixdisab digit][-usrdefprefix digits][-flash digit]
          [-callerid digit][-localringback digit][-sendIPringback -digit]
          [-eod digit]
 sysconf -print

 -print          Display system overall information and configuration.
 -plan           Number of digits for dial plan.(any positive number)
 -idtime         Inter-Digits time.(1~10 sec)
 -service        Specify gateway service type.
                      0: Dial in service, 2: HotLine service.)
 -bf             BusyForward.(ON:1 / OFF:0)
 -callalive      Enable or disable auto-disconnection after 10 seconds
                   not receiving packets from remote party.
 -keypad         Select DTMF type: 0=In-band,
                                   1=H.245 Alphanumeric,
                                   2=H.245 SignalType,
                                   3=Q.931 UserInfo.
                                   4=RFC2833.
 -flash          Flash sending.(0:Disable, 1:Enable)
```

```
 -callerid          Caller ID sending.(0:Disable, 1:Enable)
 -localringback     Local generate ring back tone.(0:Disable, 1:Enable)
 -sendIPringback Send ring back tone to IP.(0:Disable, 1:Enable)
 -prefixsw          User defined local zone prefix switch.(ON:1 / OFF:0)
 -prefixdisab       Local zone prefix disable character.(one character
                      from 0~9, *, or NONE('-' key))
 -usrdefprefix      User defined local zone prefix.
 -faxrdd            FAX redundancy depth.(0 ~ 2)
 -eod               End of dial switch.(ON:1 / OFF:0)
Example:
   sysconf -plan 4 -callalive 0

usr/config$
```

Figure 24-19 System Information Commend List

Parameter Usages:

-print print current settings

-plan digits (any positive integer) of dial plan. This police is effective for calls from PSTN side. When FXS Gateway collects the number of pre-defined digits, it will send those digits out automatically. “0” stands for “any number”, which accepts any digit length. When dial plan is set to “0”, users can end the dial with “#” to force FXS Gateway send out messages directly, or FXS Gateway will send out the messages automatically in 3 seconds after dialing stops.

-service switch to Hotline mode. (0: default; 2: hotline)

-bf Working in both Gatekeeper mode and Peer-to-Peer mode (some previous version does not support in Peer-to-Peer mode). If the line1 is engaged as well as this function is enabled, the line2 will be ringing.

-callalive Call Alive function (1 = ON; 0 = OFF). The function is used to check if the opposite party is alive when connection is established. When CallAlive is activated, FXS Gateway will send H.245 RoundTrIPDelay message to other party, and wait for response. If the other party cannot respond the message in 10 seconds, FXS Gateway will regard the opposite party as IDLE state and disconnect the call. When CallAlive is deactivated, RoundTrIPDelay message will not be sent during connection.

-keypad DTMF replay type. When value is “0”, FXS Gateway will transfer DTMF signal via RTP payload, “1” via H.245 UII Alphanumeric, “2” via H.245 UII Singal Type, and “3” via Q.931 UserInfo. Users can adjust the value

according to various applications.

-flash Disable: sending H.450 call hold and transfer message
Enable: sending normal flash message

-callerid support Bell Core callerID function. After the first ring at destination site, device will send h323ID and line number as callerID to called site.

-localringback Enable the local ring back tone or disable.

-sendIPringback Enable the ring back tone from the IP side or disable.

-prefixsw to switch on/off prefix function.

-prefixdisab Disable the defined prefix after press the selected digit (0,1,~9, *)

-usrdefprefix To define digits as prefix.

-filter To define the dialplan for the users.

-faxrdd Set the value of fax redundancy.

Be noted, the above three commands, -prefixsw, -prefixdisab and –usrdefprefix have to work together. If user would like to dial 9 to replace 123456789, he can firstly switch on the command (usr/config$ sysconf -prefixsw 1), secondly to define the prefix digits as 12345678 (usr/config$ sysconf –usrdefprefix 12345678). While user would like to dial other numbers, he can dial a defined digit – [*] to disable the function (usr/config$ sysconf –prefixdisab *), then dial to the number he wants to dial

24.7.13 [h323]

This command is to configure H.323 related parameters.

```
usr/config$ h323

H.323 stack information and configuration
Usage:
h323 [-mode    gkmode]
h323 [-gk IPaddress] [-algk IPaddress] [-gwtype type] [-prefix number]
        [-alias h323id] [-display information] [-gkdis used] [-line number]
        [-rtp port] [-h225 port] [-ttl time] [-gkfind port] [-gkras port] [-q931 port]
        [-range [start num1] [end num2]][-respto t1][-connto t2][-dfgw IPaddress]
        [-passwd number] [-gkid id]
h323 -print

      -print          Display H.323 stack information and configuration.
      -mode           Configure as Gatekeeper mode or Peer-to-Peer mode.
      -gk             Gatekeeper IP address. (0.0.0.0 ~ 255.255.255.255)
      -algk           Second Gatekeeper IP address. (0.0.0.0 ~ 255.255.255.255)
```

```
      -gkid          Gatekeeper ID
      -gwtype        Registration Mode (1 = Gateway and 0 = Terminal ).
      -dfgw          Default Gateway IP address (0.0.0.0 ~ 255.255.255.255).
      -prefix        Prefix number.
      -line1         #1 Phone number.
      -line2         #2 Phone number.
      -line3         #3 Phone number.
      -line4         #4 Phone number.
      -alias         IP side registered H323 ID.
      -display       String representing display information for reporting
                       to the called party.
      -gkdis         Gatekeeper auto discovery (gkdis, On=1, Off=0).
      -rtp           RTP port number (1024~65532).
      -ttl           RAS TTL time (0~3600 second).
      -gkfind        Gatekeeper finding port (1024~65535).
      -gkras         Gatekeeper RAS port (1024~65535).
      -h225          H.225 RAS port (1024~65535).
      -q931          H.225 call signal port(1024~65535).
      -range         Dynamically allocated port range (1500~65535).
      -respto        Max waiting time for 1st response to a new call (1~200).
      -connto        Max waiting time for call establishment after receiving 1st
                       response of a new call (1~20000).
Example:
       h323 -gk 210.59.163.171 -line1 70 -line2 71 -line3 72 -line4 73 -alias
Your_Alias_Name

usr/config$
```

Figure 24-20 H323 Stack Commend List

Parameter Usages:

-print print current h323 related settings

-mode alternatives for gatekeeper or peer-to-peer mode (0=gatekeeper mode; 1=peer-to-peer mode). If users select gatekeeper mode, a extra gatekeeper is needed when FXS Gateway is in operation.

```
usr/config$ h323 –mode 1 (peer to peer mode)
```

-gk to assign gatekeeper's IP address when FXS Gateway is in gatekeeper mode.

-algk assign second gatekeeper's IP address as redundancy.

-dfgw	default gateway is applied under Peer-to-Peer mode. User defines a constant default gateway IP address, then any number dialed will pass forward to this IP Address.
-gwtype	gateway type has two kinds, gateway and terminal. Gateway type – device will register as H.323 defined Gateway, user has to define [prefix] in next command. Terminal type – device will register as H.323 defined Terminal, [prefix] command is not necessary.
-prefix	assign Gateway prefix number, as well as the registered number on the Gatekeeper.
-line1	assign line 1 number.
-line2	assign line 2 number.

Note: *line1 & line2 number must follow the prefix number if device is configured as Gateway type. For example, if prefix number is 999, then the line1 & line2's number are 9991 & 9992.*

-alias	H.323 ID. If in gatekeeper mode, this h.323 ID must be different from others who are registering to the same gatekeeper.
-display	an addition name for user to recognize in called site.
-gkdis	Switch ON or OFF gatekeeper discovery function (1 = ON; 0 = OFF). When it's ON, FXS Gateway will multicast for gatekeeper if default gatekeeper is not presented.
-rtp	to allocate RTP port range—NOT RECOMMENDED. This may be used when RTP port range conflicts with Firewall policy.
-ttl	to set timer for TTL(Time To Live). FXS Gateway would send RRQ, with keepAlive, to gatekeeper periodically according to TTL timer.
-gkfind	gatekeeper finding port. Port number, which FXS Gateway uses it to discover a gatekeeper. Default value is 1718.
-gkras	To set default gatekeeper RAS port number. Default value, 1719, is well-known port for RAS communication.
-h225	To set the ras port.(1024~65535)
-q931	To set the call signal port.(1024~65535)
-range	To allocate port range (1500-65535) FXS Gateway may use it.
-respto	Maximum response time out
-connto	Maximum connection time out

24.7.14 [pt]

RTP payload type configuration and information

```
usr/config$ pt

RTP payload type configuration and information
Usage:
pt -print              Display the RTP payload type information
    -rfc2833           Configurate the DTMF RFC2833 payload type
    -dtmf              Configurate the DTMF payload type
    -fax               Configurate the FAX payload type
    -faxbypass         Configurate the FAX ByPass payload type
    -modembypass       Configurate the MODEM ByPass payload type
    -redundancy        Configurate the Redundancy payload type
    -modemrelay        Configurate the MODEM Relay payload type

Example:
      pt -rft2833 96 -fax 101

usr/config$
```

Figure 24-21 RTP Commend List

24.7.15 [sysinfo]

This command could show up the line is busy or not.

```
usr/config$ sysinfo

System information
=========================================
Registered Gatekeeper IP : 10.1.1.2
=========================================
Line        Status        Registration
=========================================
1           Ready         Not registered
2           Ready         Not registered
3           Ready         Not registered
4           Ready         Not registered

usr/config$
```

Figure 24-22 System Information Commend List

24.7.16 [prefix]

This command is for make rules for drop or insert prefix digits.

```
usr/config$ prefix

Prefix drop/insert information and configuration
Usage:
prefix -add [prefix number][drop number][insert digits]
prefix -delete index
prefix -modify index [prefix number][drop number][insert number]
prefix -print       Prefix drop/insert information.
          prefix       The prefix of dialed number.
          drop          Drop prefix(Enable:1/Disable:0).
          insert       Insert digits.
Example:
       prefix -add prefix 100 drop 1 insert 2000
       prefix -add prefix 100 drop 1
       prefix -add prefix 100 drop 0 insert 200
       prefix -delete 1
       prefix -modify 1 prefix 100 drop 0 insert 300

usr/config$
```

Figure 24-23 Prefix Commend List

Parameter Usages:

-add	add a rule to drop or insert prefix digits of incoming call.(***prefix –add prefix "prefix number" drop 0/1 insert "insert number"***)
-delete	delete a rule to drop or insert prefix digits of incoming call. (***prefix –delete prefix "prefix number"***)
-modify	modify a rule to drop or insert prefix digits of incoming call. (***prefix –modify prefix "prefix number" drop 0/1 insert "insert number"***)
-prefix	set which prefix number to implement prefix rule.
-drop	enable or disable drop function. If this function is enabled, Gateway will drop prefix number on incoming call.
-insert	set which digit to insert on incoming call.

24.7.17 [voice]

The voice command is associated with the audio setting information.

There are four voice codecs supported by FXS Gateway.

```
usr/config$ voice

Voice codec setting information and configuration
Usage:
voice [-send [G723 ms] [G711A ms] [G711U ms] [G729 ms] [G729A ms] [G729B ms]
[G729AB ms] ]
        [-volume [voice level] [input level] [dtmf    level]]
        [-nscng [G723 used3]]
        [-echo used] [-mindelay t1] [-maxdelay t2]
voice -print
voice -priority [G723] [G711A] [G711U] [G729] [G729A] [G729B] [G729AB]

    -print        Display voice codec information and configuration.
    -send         Specify sending packet size.
                  G.723    (30/60/90 ms)
                  G.711A (20/40/60 ms)
                  G.711U (20/40/60 ms)
                  G.729    (20/40/60 ms)
                  G.729A (20/40/60 ms)
                  G.729B    (20/40/60 ms)
                  G.729AB (20/40/60 ms)
    -priority   Priority preference of installed codecs.
                  G.723
                  G.711A
                  G.711U
                  G.729
                  G.729A
                  G.729B
                  G.729AB
    -volume       Specify the following levels:
                  voice volume (0~63, default: 28),
                  input gain (0~38, default: 28),
                  dtmf    volume (0~31, default: 23),
    -nscng        No sound compression and CNG. (G.723.1 only, On=1, Off=0).
    -echo         Setting of echo canceller. (On=1, Off=0, per port basis).
```

```
      -mindelay    Setting of jitter buffer min delay. (0~150, default: 90).
      -maxdelay    Setting of jitter buffer max delay. (0~150, default: 150).
Example:
      voice -send g723 60 g711a 60 g711u 60 g729 60 g729b 60 g729ab 60
      voice -volume voice 20 input 32 dtmf 27
      voice -echo 1 1 1 1

usr/config$
```

Figure 24-24 Voice Commend List

Parameter Usages:

-print print current voice information and configurations.

-send to define packet size for each codec. 20/40/60ms means to send a voice packet per 20/40/60 milliseconds. The smaller the packet size, the shorter the delay time. If network is in good condition, smaller sending packet size is recommended. In this parameter, 20/40/60ms is applicable to G.711u/a law, and G.729 codec, while 30/60ms is applicable to G.723.1 codec.

-priority codec priority while negotiating with other h323 device. This parameter determines the listed sequence in h.245 TCS message. The codec listed in left side has the highest priority when both parties determining final codec. User can also select the particular codec without others.

```
usr/config$ voice –priority g723    (only select this codec)
usr/config$ voice –priority g723 g729 g711u g711a (select four codecs, and g723 is the first choice)
```

-volume There are three adjustable value. **voice volume** stands for volume, which can be heard from FXS Gateway side; **input gain** stands for volume, which the opposite party hears. **dtmf** volume stands for DTMF volume/level, which sends to its own Line1 or Line2.

```
Note, level of volume is too high or too low may be result in bad performance while connecting to each other.
```

-nscng silence suppression and comfort noise generation setting (1 = ON; 0 = OFF). It is applicable to G.723 codec only. An example is demonstrated below:

```
usr/config$ voice -nscng g723 1
```

-mindelay the minimum jitter buffer size. (Default value= 90 ms)

-maxdelay the minimum jitter buffer size. (Default value= 150 ms)

```
usr/config$ voice –mindelay 90 –maxdelay 150 -optfacor 7
```

-echo activate each canceler (1 = ON; 0 = OFF).

Note: *be sure to know well the application before you change* ***voice*** *parameters because this might cause incompatibility.*

24.7.18 [support]

This command provides some extra functions that might be needed by users.

```
usr/config$ support

Special Voice function support manIPulation
Usage:
support [-t38 enable] [-t38ecm enable] [-fstart enable] [-tunnel enable] [-h245f
s enable]
support -print
      -t38          T.38(FAX) enabled/disabled.
      -t38ecm       T.38(FAX) ECM enabled/disabled.
      -fstart       Fast start enabled/disabled.
      -tunnel       H245 Tunneling enabled/disabled.
      -h245fs       H245 message after FastStart support enabled/disabled.
Example:
      support   -t38 1
      support   -t38ecm 1
      support   -fstart 0
      support   -tunnel 1
      support   -h245fs 1

usr/config$
```

Figure 24-25 Support Commend List

Parameter Usages:

-print print current settings in **support** command.

-t38 to switch ON/OFF (1 = ON; 0 = OFF) T.38 fax ability. When T.38 ability is ON, FXS Gateway will automatically defer codec (G.723 or G.729a) to T.38 when FAX signal is detected.

-t38ecm Support the error correction in the high speed fax mode.

-fstart to switch ON/OFF (1 = ON; 0 = OFF) fstartStart function. Fast Start function can shorten the connection time if the opposite party also

supports fastStart.

-tunnel to switch ON/OFF (1 = ON; 0 = OFF) H.245 tunneling function. If the function is ON, FXS Gateway will send H.245 (Call Control messages) via H.225's (Call Signal messages) link. The function is effective only when both side support h245 tunnel.

-h245fs If the function is ON, FXS Gateway will send H.245 messages after FastStart.

Note: *it is not recommended to change the value in this command, only if users do know well the application. This might cause incompatibility with other devices.*

24.7.19 [tos]

IP Packet ToS (Type of Service)/ Differentiated Service configuration.

```
usr/config$ tos

IP Packet ToS(type of Service)/Differentiated Service configuration
Usage:
tos [-rtptype dscp]
tos [-sigtype dscp]
tos -print
      [-rtpreliab mode]
tos -print

Example:
     tos -rtptype 7 -sigtype 0

usr/config$
```

Figure 24-26 ToS Commend List

Parameter Usages:

-rtptype the packages of voice

-sigtype the package of call signal

Note:

The value of rtptype and sigtype is from 0 to 63.

It's working if it supported by your network.

24.7.20 [phone]

FXS Gateway progress tone is configurable. Default tone value is set according to U.S. tone specification. Users may adjust the values according to their own country's tone specification or users-defined tone specification.

```
usr/config$ phone

Phone ringing , ringback tone , busy tone , dial tone setting and notes
Usage:

phone [-ring [freq      ] [ringON    ] [ringOFF ] [ringLevel]]
        [-rbt    [freqHi ] [freqLo    ] [freqHiLev] [freqLoLev]
                  [Tone1ON] [Tone1OFF] [Tone2ON    ] [Tone2OFF ]]
        [-bt     [freqHi ] [freqLo    ] [freqHiLev] [freqLoLev]
                  [Tone1ON] [Tone1OFF] [Tone2ON    ] [Tone2OFF ]]
        [-dt     [freqHi ] [freqLo    ] [freqHiLev] [freqLoLev]
                  [Tone1ON] [Tone1OFF] [Tone2ON    ] [Tone2OFF ]]
        [-flash [freqLo ] [freqHi ]]
phone [-print [ring]|[rbt]|[bt]|[dt]|[flash]]

        -print    Display phone ringing/tone configuration.
                    ring :      ringing
                    rbt    :     ringback tone
                    bt     :     busy tone
                    dt     :     dial tone
                    flash:     flash tone
        -ring     ringing configuration set .
        -rbt      ringback tone configuration set .
        -bt       busy tone configuration set .
        -dt       dial tone configuration set .
        -flash    flash configuration set .
Note:
        ringing frequency     : 15 ~ 100     (Unit : Hz)
        ringing ring ON/OFF : 0    ~ 8000    (Unit : ms)
        ringing level             : 0    ~ 94       (Unit : V)
        tone       frequency     : 0    ~ 65535 (Unit : Hz)
        tone       freqLevel     : 0    ~ 65535 (Unit : mVrms)
        tone       Tone ON/OFF : 0    ~ 8000    (Unit : ms)
Example:
```

```
        phone -print rbt
        phone -ring 20 2000 4000 94
        phone -rbt 480 440 125 105 2000 4000 2000 4000
        phone -bt 620 480 125 105 500 500 500 500
        phone -dt 440 350 96 96 8000 0 8000 0
        phone -flash 400 800

usr/config$
```

Figure 24-27 Phone Commend List

Parameter Usages:

-print print current call progress tone configurations (**ring** – ring tone, **rbt** – ring back tone, **bt** – busy tone, **dt** – dial tone). This parameter should be accompanied with tone type. For example:

```
usr/config$ phone -print rbt
Phone ringback tone paramter
    Ringback Tone frequency high          : 480
    Ringback Tone frequency low           : 440
    Ringback Tone frequency high level    : 155
    Ringback Tone frequency low level     : 155
    Ringback Tone tone1 on                : 2000
    Ringback Tone tone1 off               : 4000
    Ringback Tone tone2 on                : 2000
    Ringback Tone tone2 off               : 4000
```

Note:

For tone simulation, FXS Gateway adopts dual frequencies as traditional telephone does. If users want to have their own call progress tone, they can change the value of tones. High and Low frequency/level/cadence can be configured respectively.

-ring to set RING tone value.
The played tone type, when FXS Gateway is receiving a call.

-rbt to set RingBackTone value
The played tone type, when FXS Gateway receives a Q.931 Alerting message. In condition that FXS Gateway is the originate side.

-bt to set BusyTone value.
The played tone type, when destination is busy.

-dt to set DialTone value.
The played tone type, when hook off a phone set of workable FXS

Gateway.

-flash set the detective flash range in ms, for example, 300-500 ms.

24.7.21 [bureau]

To set Hotline function must be under Peer-to-Peer mode and switch to hotline mode.

```
usr/config$ bureau

Bureau line setting information and configuration
Usage:
bureau -hotline Port DestIP (TELnum or PortNo)
bureau -print

    -print      Display Bureau line information and configuration.
    -hotline    Set Hot line information.
Note:
    Hotline feature should be used together with:
        $sysconf -service 2 (HotLine service)
        $h323      -mode      1 (peer-to-peer mode)
Example:
    bureau -hotline 1 192.168.4.69 628 2 192.168.4.200 999

usr/config$
```

Figure 24-28 Bureau Commend List

Parameter Usages:

-print Display current Hotline table.

-hotline Define Line1 and Line2's Hotline table respectively. The table is included [Line number], [destination IP Address] and [destination Port or Number]. For example, define Line1 hotline table and destination IP Address is 200.168.4.69

1. Destination is a FXS device, 628 is its Line1 number

usr/config$ bureau -hotline 1 200.168.4.69 628

User picks up the Line1, and then hears the ringback tone generated from destination. Of course, 628 are ringing simultaneously.

2. Destination is a FXO device, Port 3 is the one connected to PSTN Line.

usr/config$ bureau -hotline 1 200.168.4.69 82265699

User picks up the Line1, and then hears the ringback tone generated from destination. Simultaneously, 82265699 numbers is the destination, which is dialed from Port 3.

(Above FXO example is subject to the FXO configurations, such as 2nd dial ON or OFF.)

24.7.22 [rom]

ROM file information and firmware upgrade function.

```
usr/config$ rom

ROM files updating commands
Usage:
rom [-print] [-app] [-boot] [-dsptest] [-dspcore] [-dspapp]
      -s TFTP/FTP server IP -f filename
rom -print
      -print         show versions of rom files. (optional)
      -app           update main application code(optional)
      -boot          update main boot code(optional)
      -boot2m        update 2M code(optional)
      -dsptest       update DSP testing code(optional)
      -dspcore       update DSP kernel code(optional)
      -dspapp        update DSP application code(optional)
      -s             IP address of TFTP/FTP server (mandatory)
      -f             file name(mandatory)
      -method        download via TFTP/FTP (TFTP: mode=0, FTP: mode=1)
      -ftp           specify username and password for FTP
Note:
      This command can run select one option in 'app', 'boot',
      , 'dsptest', 'dspcore', and 'dspapp'.
Example:
      rom -method 1
      rom -ftp vwusr vwusr
      rom -app -s 192.168.4.101 -f app.bin

usr/config$
```

Figure 24-29 rom Commend List

Parameter Usages:

-print show versions of all rom files

-app, boot, boot2m, dsptest, dspcore, dspapp to update main Application program code, Boot code, DSP testing code, DSP kernel code, or DSP application code.

Most of all, the Rom file needed to get upgrade is App or Boot2m. Please check the exactly Rom file before doing download procedure.

-s to specify TFTP server's IP address when upgrading ROM files.

-f to specify the target file name, which will replace the old one.

-method to decide using TFTP or FTP as file transfer server. "0" stands for TFTP, while "1" stands for FTP.

-ftp if users choose FTP in above item, it is necessary to specify pre-defined username and password when upgrading files.

24.7.23 [passwd]

For security concern, users have to input the password before entering configuration mode. "**passwd**" command is for password setting purpose.

```
usr/config$ passwd

Password setting information and configuration
  Usage:
     passwd -set Loginname Password
     passwd -clean
  Note:
     1. Loginname can be only 'root' or 'administrator'
     2. passwd -clean will clear all passwd stored in flash,
          please use it with care.
  Example:
     passwd -set root Your_Passwd_Setting

usr/config$
```

Figure 24-30 Passwd Commend List

Parameter Usages:

passwd <*login name*> <*password*>

Note:

<login name> can be "root" or "administrator" only. "root" and "administrator" have the same authorization, except commands that can be excuted by "root" only – "passwd –set root", "rom –boot","room-boot2m" and "flash –clean"

24.7.24 [sdial]

SpeedDial information and configuration

```
usr/config$ sdial

SpeedDial information and configuration
Usage:
      sdial [-add       [briefNum    mappingNum]]
      sdial [-modify [briefNum    mappingNum]]
      sdial [-delete [briefNum    mappingNum]]
      sdial [-sw enable]
      sdial [-print]

    -add          Add a record to speedDial table.
    -modify    Modify a exist record.
    -delete    Delete a record from speedDial table.
    -sw           SpeedDial function enable(1)/disable(0).
    -print      Display speedDial table.
Note:
      1. Use "*" as speedDial trigger.
      2. One digit only for briefNumber and maxmum 20 digits for
          mappingNumber.
      3. No reboot is needed for this feature.(commit neened)
      4. The speedDial feature may conflict with UserDefinedPrefix
          feature when using the same trigger as "*".Therefore,before
          the feature is taking effective,it should check whether the
          UseDefinedSwitch is ON or OFF,UserDefinedPrefix is "*" or
          not to prevent duplicate definition and system conflict.
Example:
      sdial -add 0 00998222000991 9 00998222000992 ..
      sdial -modify 2 00998222000999 ..
      sdial -delete 0 1 2 ..
      sdial -sw 1

usr/config$
```

Figure 24-31 Speed Dial Commend List

Parameter Note:

-- *speed dial digit is only from 0,1,~9*

-- must dial [*] as trigger, so be careful of another command (*usr/config$ sysconf –prefixdiab **). Please do not use it together.